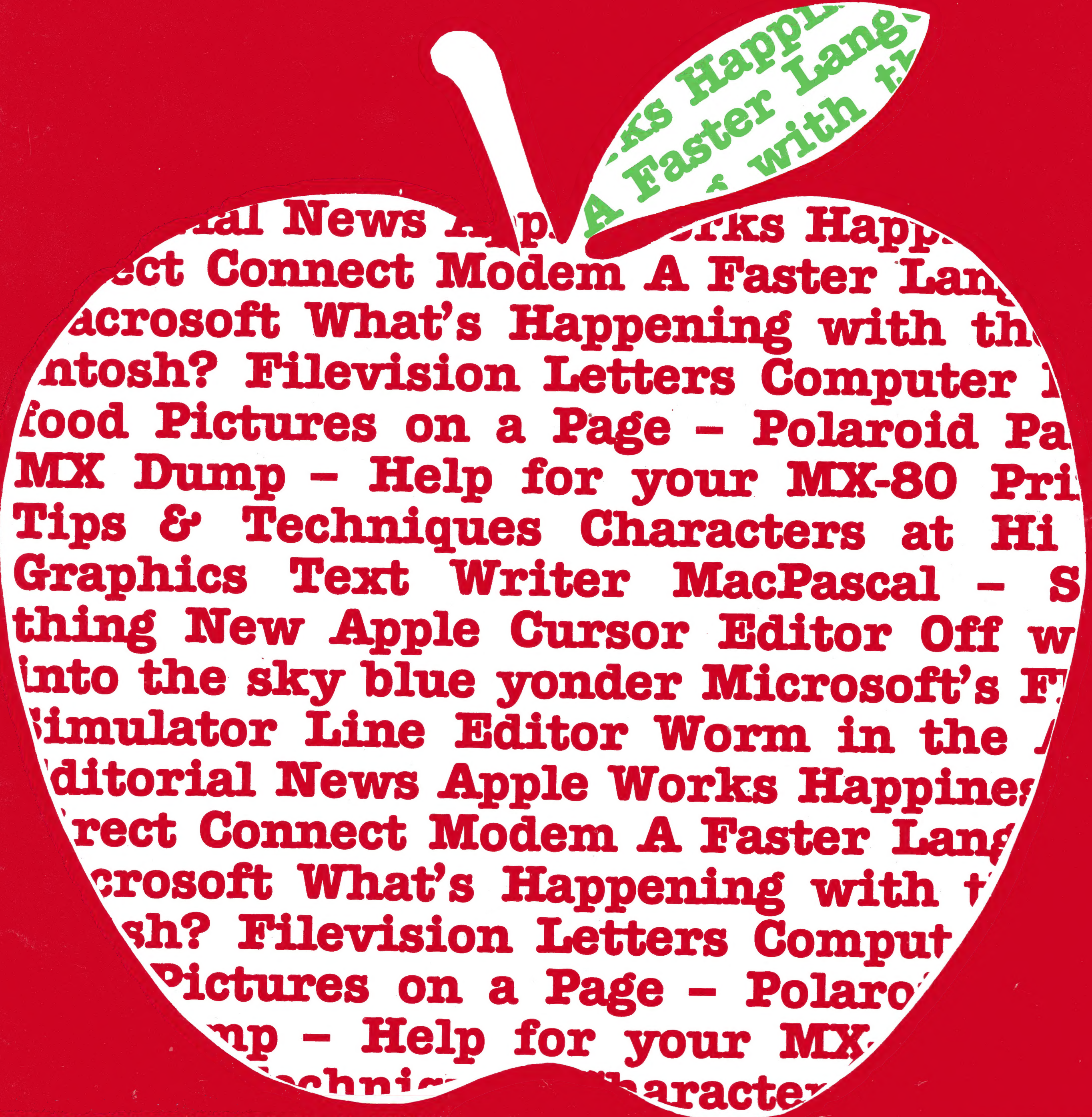
The Independent Magazine

Vol 1 No 9 November $3*

The Australian Apple Review

A Gareth Powell Publication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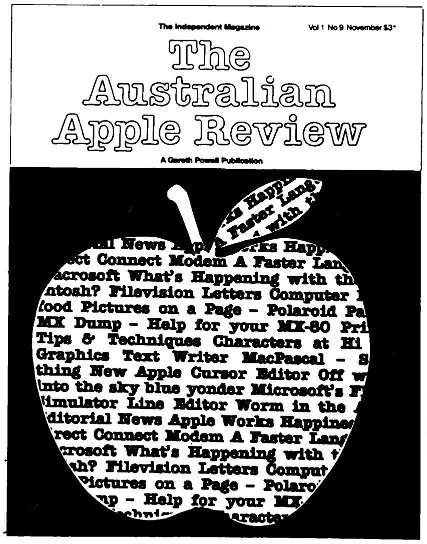
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Editorial

It's coming up to Christmas, and you are probably considering what to buy for your nearest and dearest.

There are many educational and games/educational programs for the Apple which would appeal to the young and not-so-young – as Merlin said in "The Sword in the Stone", when all else fails you, learn something. (Or on a more mercenary note, in the words of Benjamin Franklin, "an investment in knowledge pays the highest interest".)

Have a look at the Control Data PLATO educational series. They can teach you almost anything – computer literacy, languages, physics, maths.

Micro Nationwide distribute educational games such as South Dakota. You can get learning games for children under seven (Number Farm, Alphabet Circus etc) from Dataflow.

Spinnaker Software, distributed by Futuretronics, has a wide range of titles available for 3-year-olds upwards. Or how about a word processing program for children, Wordsmith from Jacaranda Wiley?

Many educational games are more fun when played by a group of people – the whole family can join in. The same applies to adventure games. Just pop into your local dealer and enjoy choosing.

(It used to be that I couldn't walk past a bookshop. Now it's a computer dealer that I find irresistible. And when I should be working, Lode Runner is my downfall.)

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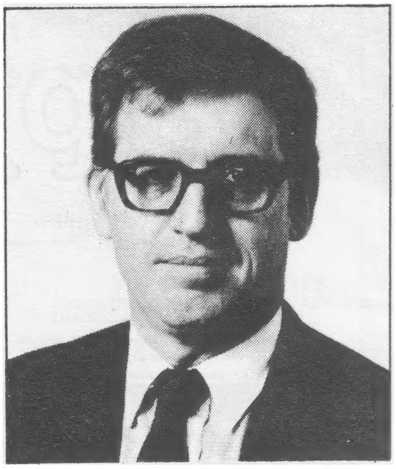

The Australian Apple Review needs more input from lots of different people, fresh ideas, different viewpoints. So we would be very happy to receive contributions from you, the readers – programs, reviews, comments and criticisms on software, ideas on how to solve problems, anything you would like to send us. (Printouts not too grey, please.) And tell us what you like, what you hate, what we should have more of.

I'm off to foreign parts now. In the next issue of Apple Review I will have the latest news for you about what they're selling in the Golden Supermarket and manufacturing in Japan and Taiwan. ☐

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The Australian Commodore Review

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News

NetComm/Apple datacommunications range

NetComm Australia now markets a complete range of datacommunications packages for the Apple II family.

These consist of an intelligent, internally mounted modem, plus further communications cards and software. They give the Apple II, II+ and //e a broad range of file transfer, database, videotex and mainframe communications capabilities.

Apple's own Modem 1200 (300 baud full duplex and 1200/75 full duplex) was designed and manufactured by NetComm, which will also support the device for Apple in Australia after the product launch later this year.

NetComm's communications range is based on the Apple In/Modem. It supports remote communications for the entire NetComm/Apple range, and provides standard telephone communication with such databases as CSIRONET and OTC MIDAS, and features auto-dial, auto-answer and disconnect intelligence.

The only Telecom-approved Apple modem for internal slotting, the device incorporates a slim-line telephone handset and standard telephone plug. It supports 300-baud full duplex, 1200 baud half duplex, and 1200/75 (PRESTEL) full duplex baud speed transmissions.

In changed mode, direct connection can be made to US and European hosts.

Price of the Apple In/Modem is $495.

Extending the remote communications capability of the NetComm-Equipped Apple requires one further communications card ($513) and assorted software, depending on the individual communications requirement.

A major market is expected from the many Australian school administrators using Apples, who could acquire the ability to dial-up Education Department mainframes.

Key NotComm software communications packages now available include:

Apple/IBM 3270 SNA Emulation. $250. Provides accurate emulation of an IBM 3274 controller with four windows of 3278 VDUs and/or 3287 printers. The Apple can auto-dial remote IBM SNA hosts and connect as a fully compatible IBM terminal.

IBM 2780/3780. $125. Connection to nearly any IBM plus many other hosts for error-corrected file transfers. Can also link Apples to other Apples, sending Applesoft and Binary files.

Apple/IBM 3270 BSC Emulation. $100. Converts the Apple into a BiSynch 3274 with a single attached 3278 VDU plus local printer.

NetComm Async2. $145. Provides asynchronous terminal communications with public databases or asynch hosts such as WANG, DEC or PRIME. With auto-dial and answer, supporting file transfer, auto log-on, on-line printer, screen image transfer.

NetComm Videotex (PRESTEL). $145. Converts the Apple into a monochrome videotex/viewdata/PRESTEL-type interactive terminal.

NetComm Australia, (02) 498 5577.

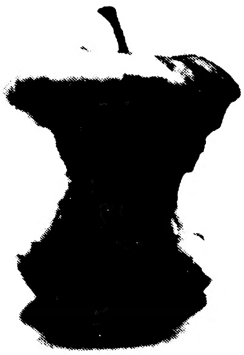
Linking up to the Source

Seahorse Computer Services Pty Ltd inform us you can link up to The Source with a terminal program in your Apple and a modem or acoustic coupler to connect to the telephone system.

A terminal program for the Apple, ASCII Express, is available for $75. (The Apple Vision 80 card, which provides an 80 column display, also has complete built-in communications features.)

It only takes seconds to get through to The Source in Virginia. The once only joining fee is $150.

For further information, contact Seahorse Computers, PO Box 47, Camden, NSW 2570, or your local computer dealer.



Jacaranda school software

Some software programs for schools available from Jacaranda Wiley have been reduced in price, as follows.

Moving into Maps mapping skills programs:

Scavenger Hunt	$35
Sheep-Dog Trial	$35
Quick-Cartage Company	$45
Cunning Running	$45

Language Arts/Social Science:

Raft-Away River	$45

Social Science simulation:

Gold-Dust Island	$49

Information from Jacaranda Wiley (07) 369 9755.

Freddy the friendly turtle

Freddy's Puzzling Adventures, a new DLM Arcade game, provides fun and excitement for children while they practise problem solving skills in animated puzzles.

The child controls Freddy's movements around his pond, to choose and solve four word puzzles and six number puzzles – and even create his own. Solving a puzzle is rewarded with exploding rockets, hidden monsters, lively music.

Distributed in Australia by Dataflow, (02) 745 3303.

Macintoshes for accountants

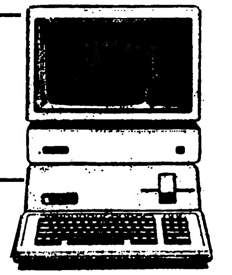
One hundred and twenty Apple Macintosh portable computers have been bought by the chartered account company Peat Marwick Mitchell & Co, to be used by its auditors in clients' offices.

Most auditors will carry a Macintosh with a numeric keypad, Imagewriter printer and software into a client's office, conduct the audit with the client, and then make a hard copy report.

The auditors will use Multiplan, together with software developed internally at Peat Marwick & Mitchell. ☐

Apple Works

spreadsheet/database/word processor



It was inevitable after the success of Lotus 1-2-3 that it would only be a matter of time before such a program was produced for the Apple IIe (the Macintosh is another matter, it is actually going to get Lotus in the very near future).

For the past few months I have been using Apple Works, which is, in effect, Apple's answer to Lotus. The phrase you are looking for is "integrated software package" and this one contains a word processor, a database and a spreadsheet.

None of them are individually at the cutting edge of technology in their respective spheres. On the other hand, none of them appear to have serious faults and one, the database, would be my program of choice for the Apple.

This is an ideal package for a beginner who wants to use an Apple to its fullest advantage without having to learn a complete new set of complicated commands for each sector.

The package is designed for use on a standard Apple IIe with a built in 80 column card, and is a two disk boot because it uses ProDOS. Much though I admire ProDOS I think that if it means you have to use two disks instead of one then someone needs to sit down and think very carefully whether that is a forward or a backward step.

This one feature is the only serious criticism I have of the whole program. No one can seriously tell me that an integrated package such as Apple Works doesn't lose much of its attraction when you have to boot two disks just to load the program. This is an area that Apple must attend to. If ProDOS is that great an advance on DOS 3.3 – and I have my doubts – that advance is going to be totally negated if a separate disk is needed to support it. Life is too short.

Enough of nagging and on to the good stuff.

One of the joys of Apple Works is that once you have learned one set of commands you have the whole package in your grasp.

Research is beginning to show that the number of people who need to use the full scope of a complex database package like dBase II is relatively small.

The number of users who need all of the facilities of a spreadsheet package like, say, MultiPlan is, again, finite.

For people who do not need the quite awesome power of these programs it is plainly daft to spend the time needed to learn and fully appreciate them. Better to learn how to handle one integrated package and remain within its quite acceptable limitations.

For the average person with average needs who is going to use an Apple IIe as a personal computer, then Apple Works supplies almost everything that is needed. And the few gaps that exist are slowly but surely being filled up as we shall see.

Using Apple Works as a word processor is a perfectly satisfactory experience.

All the time that you are working on a file, information telling you what you are working on and in which mode appears at the top of the screen starting in the left hand corner. The mode is normally REVIEW/ADD/CHANGE.

It is interesting that the commands for this word processing section are very reminiscent of the commands for VisiCalc, and anyone who has had experience with that program will have no problems in getting Apple Works up and running within a very short period of time.

All of the standard capabilities of a word processing program are built in and the program is perfectly suited to the standard user.

The only problem I found is that after printing out a document the program automatically defaults to its own set of parameters for laying out the document.

For most of us there is a fairly standard way of printing out letters and memos and our standard way may not be that selected by Apple Works.

In my case it definitely is not.

The program could be vastly improved by allowing you to set the printing defaults so that they remained in force for a series of documents instead of having to be reset each time.

(As an example of low, rat cunning I should point out that I stuck a small sub-routine in a print buffer which is being developed by Dick Smith and which I have got on loan. It takes the standard output from Apple Works and converts it into my format automatically before passing it on to my C. Itoh 8510 dot matrix printer.

This is fine if you have a print buffer which will hold a program in memory.

Most of us do not.

There obviously must be some way of modifying Apple Works so that the print output default is tailored to your precise needs. I just can't find it in the instructions. When I work out a way I'll let you know.)

The word processor allows you to work at either 70 or 80 columns and the slightly larger characters of the former are somewhat easier to read.

One feature that I strongly missed was a powerful and simple to use Glossary function so that I could build up a library of commands to be called forward at will. There is an attempt at providing such a facility – the whole program is built around a series of Macros and you can work your way into a Glossary through these Macros – but it is nowhere near as simple to use as the Glossary command in Zardax or MultiMate.

The spreadsheet

Ever since VisiCalc revolutionised the world of computing (and was probably largely responsible for the success of the early Apple), spreadsheets have remained inherently the same.

It's just that a lot of bells and whistles have been added.

The most important enhancement has been the ability to set the width of the columns to precisely accommodate the figures you are using. VisiCalc simply does not have this facility, which wastes an immense amount of space and is, in many ways, why VisiCalc is dying on the vine.

Apple Works does have this function, which immediately makes it superior to VisiCalc. Another great joy is that it automatically uses the 80 column format so that you can have a fair amount of information on the screen at the same time. Apple Works has also changed some of the commands to something approaching the English language as she is wrote.

For example, I always disliked the word "Replicate", which is one of the keystones of VisiCalc. I looked it up in the dictionary to make sure the damned thing existed and it does. That doesn't make me feel any more comfortable with it.

Apple Works uses "Copy" which effectively means the same thing and is a hell of a lot easier to understand.

As always the limits of your spreadsheet are set by the limits of the memory you have available. It may be possible to use this spreadsheet with a RAM card so that you can handle truly substantial spreadsheets. I could find no easy way of doing this but I am quite certain that a short program which you can insert in Apple Works as a macro to allow such an extension will soon be freely available.

The reason why I believe this is that the sale of RAM cards is directly tied to their ability to extend programs. Therefore every RAM card manufacturer, and there are several of them around, keeps a pet programmer whose main job is to write small patches to allow any new and popular program to be used with the specific RAM card. Otherwise that card's potential sales will surely diminish. Most users will not often need such a capability.

The database

This works very sweetly indeed.

It is, of course, nowhere near as powerful as dBase II, but on the other hand it is a joy to learn and the commands are simple to remember. As in all databases you have to format the way in which you want to present your information and there seems to be a built-in limitation of eight formats. As I have never gone beyond three this is absolutely no problem. If you need to use more than eight formats you almost certainly need a more powerful database.

The search procedure is both faster and more flexible than on almost any other database available for the Apple IIe, and is a positive encouragement to browse, scan and search by any preset field or through using standard Booleian operators (AND,OR etc).

This is a database with which one can become very contented very quickly and I think it is worth the price of the package alone.

Where Apple Works has it over all other programs is the fact that you can accomplish so much without disk swapping.

You can move happily from program to program and when you return you are at the exact point where you started from in the previous program you were working on. This deserves an example.

I was preparing a market survey for an airline and I needed to use the spreadsheet to present the figures in a readily assimilable form. I needed to use the database in which I had stored information on every port of call of that airline.

Before I started using Apple Works I would have written the body of the report using a word processing system. Then I would have retrieved the information I needed from the database and typed it in by hand.

Finally, I would have set up a spreadsheet and printed it out separately.

Understand I am not complaining. I remember having to do this exercise with a typewriter, a calculator and an assortment of badly written notes.

With Apple Works, I wrote the report hopping backwards and forwards into the database as needed and pulling the information directly into the body of my copy.

I did the same with the spreadsheet.

Not because I needed it printed in the centre of the report, but the word processing program allowed me to append explanations of the way in which I had arrived at all the figures.

Working in that way Apple Works soon becomes indispensable.

Can Apple Works be improved?

Sure.

Because Apple have very intelligently left the program unlocked, I have been able to load it into my Winchester hard disk drive which already holds ProDOS. But, because my spelling is lousy, I had to try and get it to work with Sensible Speller. This was possible but not felicitous and involved a fair amount of disk swapping, which makes the exercise rather tedious.

Then I was called by ex-Thespian Greg Lister of Software Source who imports an add-on for Apple Works called Megaworks. This excellent program gave me a spelling checker which was specifically designed to blend in with Apple Works.

It also gave me a mail merger so that I could prepare a standard letter with Apple Works and then mail it out to a list contained within the database.

Now that I have this loaded in the hard disk, life has become even easier and I am sure we are going to see further add-on enhancements of this nature in the very near future.

If I were advising an absolute beginner, I would say buy an Apple IIe and Apple Works plus Megaworks. Because then there would only be one set of commands to be learned for full computer literacy.

It may well be that I am going to switch over to Apple Works on a permanent basis, but I will need more time to fully explore all the possibilities of the program before I make that decision. Because the program is menu driven it is ideal for beginners but not as fast to manipulate as it might be. We'll see. ☐

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WF936/81

Happiness is a direct connect modem

You get accustomed to noise. With two sons who have carried sibling rivalry into their mid-teens, the odd shouting match or noisy punch-up hardly registers. Not even when it's accompanied by Black Sabbath at 110 db(A).

Why, then, should a father of more than usual equanimity suddenly start yelling his head off at the first sound of body hitting carpet, or the early strains of the latest in hard rock?

It always happened when he was communing with his computer (an elderly Apple II+), but it wasn't the disturbance to his train of thought that caused the blow-ups. Trouble was, the aging Apple was trying to have a conversation with a big new VAX, and it couldn't stand background noise.

Acoustic coupler

Father had listened to some computer-buff friends when he first decided that communications ability on the Apple was the greatest necessity in life. They'd been free with advice— get an acoustic coupler, they said. So much simpler. So much more tolerant of the noisy phone lines we have to endure.

300 Baud model

So he bought one. Nothing fancy; just a little 300 Baud model.

Sure it was simple. All you have to do is find a telephone handset that fits the modem. Switch it on. Dial the number. Listen for the carrier. Put the handset in the modem. Back to the keyboard. Hit the right Vision-80 communications code keys.

And get "H&F:*JS1(BP-WS;QM! RKZ7S3% SYNTAX ERROR" on the screen.

Damn! Was it a case of being too slow, and the VAX got sick of waiting? Was it a noisy phone line? Something wrong with the Apple? No way of knowing.

Try again. Smarter this time. Put the handset in the modem **first**; then dial. Plenty of time to hit "[CTRL]-Z" "C" [RETURN] [RETURN].

"1=6NG$H4+W3@DM1(V*GM9.H F!G?O", and Drive 1 starts spinning of its own accord. What happened this time? Maybe the dial tone dropped out to engaged while you were trying to make the handset mate with the coupler? Dial again.

Of course you always get through eventually; well, usually. But at what cost in blood pressure? And in telephone bills?

And when you are hooked up, right in the middle of sending 4300 data elements to the VAX one of the kids yells from two feet away.

Garbage on the screen. Ruined file. He'd managed to acoustic couple himself to the VAX, and it didn't like what he was saying.

Father was sick of it. He was even ready to blow a week's pay on a MoDem card and give the Apple's overworked fan a few more watts to get rid of, but none of his knowledgeable friends knew of a card they could recommend.

Sendata 300 MoDem

One day a kind friend took pity. He just happened to have a Sendata 300 direct-connect MoDem spare for a few days. No telephone handset with it, but would you like to borrow it?

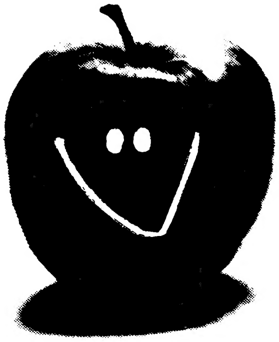
Life could hardly be worse, so why not? Off to the local phone shop, and for $19.95 a cute little handset with built-in push-button dial. Take off the Telecom plug, undo four screws an the Sendata and slip on the phone cable connectors. Add power from a 9v transformer, plug in the cable from the Apple serial card and we should be in business.

No manual with the MoDem, but it looks simple enough. Two switches on the front—"ORIG - OFF - ANS" and "PHONE - DATA".

Select "ORIG" because the call's starting here. Select "PHONE". Magic! A dial tone!

No worries

Dial VAX. Get the carrier. Switch to "DATA". Type in the communications code. VAX answers in its usual polite fashion. Too easy. Maybe it was just luck. Try again.



Same thing. And the next day. And the next. No garbage. No berserk disk drives.

One of the kids yell. Father starts to yell back, then stops himself. Nothing happened! The damned thing's deaf!

It may be deaf, but it's cute. Four little LED's on the front: one for power, one that shows carrier detection and two marked TX and RX. Press a key and TX lights up, just to reassure you your message got through. VAX replies and the RX light duly responds. You actually know what's happening!

Father just has to have one of his own. A call to his friendly computer dealer, and the good news is that he can have a Sendata 1200- Baud model for $350, but a 300 Baud model was only going to cost $220. Money talks louder than speed — he'll take the 300 Baud model.

TX and RX lights flashing

It's been next to the Apple for about six weeks now, hardly bigger than a paperback novel, it's TX and RX lights flashing happily. This quarter's phone bill is going to play hell with Telecom's budget — not one wasted call so far. And the boys smile at their dad again.

But there's a new necessity in life. You can't leave that "ANS" position unused. Now if the Apple had it's own phone line, you could just leave it switched on in comms mode, blank disk in the drive, and tell your friends...... ☐

Can you be ruth and a loving paren

There are many ways for you to be more competitive in the way that you go about your business. (The faint-hearted would call some of these ploys ruthless.)

But there is one way that allows you to improve your business efficiency, and give your kids a head start at the same time.

It's the new Apple IIc.

Apple IIc. The 8 pound heavyweight.

For such a powerful, capable machine, the Apple IIc is extremely compact.

The new Apple weighs just less than 8 pounds, half as much as computers with half its power. It has been designed to be the same size as a 3-ring binder, not a 3-ring circus.

It has over 10,000 software programs written for it. With educational programs that graduate from Spelling to Acid-Based Chemistry.

And with business programs that range from Inventory Control to Sales Analysis.

Apple IIc. The perfect business partner.

When you take your Apple to work, you'll find there's an Apple program to help you keep records, manage finances and prepare, file and retrieve documents. There are many Apple programs written for specific use by people such as farmers, doctors, lawyers and accountants.

With an Apple printer you can easily turn screeds of information into graphs and charts in seconds, not in hours.

Should your office possess a mainframe computer, your Apple can connect into it.

Whether you're working directly with a mainframe program or transferring wads of information onto a program disk for your later use, you will soon see that having an Apple IIc on your desk is a lot smarter than having a dumb terminal.

In no time, your nights and weekends of being office bound, simply because the computer's there, are over.

Apple IIc. The perfect teacher.

When you take the Apple home you'll realise that a perfect, patient inspiring teacher is never far from hand.

After plugging the Apple into a normal television or an optional monitor, the first of 6 self-explanatory programs can be inserted into the built-in disk drive.

Young and old will very quickly realise how simple Apple has made it to master the personal computer.

And in no time at all, young people will find themselves at the door of one of the most unusual libraries ever assembled, the Apple software library.

Even though there are new programs written for the Apple every day, there are currently over 2000 education based programs available.

At their own pace, with the new found

less in business
t at the same time?

concentration that a computer creates, your children can take themselves on a private tuition course that covers virtually every subject on the school curriculum.

Whether they're learning to read music or a foreign language, your children will be enjoying the considerable advantages of a student to teacher ratio of 1 to 1.

Whatever the subject however, many people believe that familiarity alone with a computer is going to be a tremendous advantage in the future of a young person growing up today.

Who knows, an Apple may give your kids such a head start, they may never even have to be ruthless in business.

For the address of your nearest Apple dealer, phone Sydney 908 9088 or toll-free (008) 221 555.

apple

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A faster language — Macrosoft

by Gareth Powell

There are people who are born with the ability to write in Assembly language. It is an innate talent rather like being able to solve "The Times" crossword in under four minutes. I can do neither. Not write in Assembly language. Not solve "The Times" crossword.

And yet I have some programming ability and happily churn out programs in BASIC. Everyone sneers at BASIC but it can, if written properly, work quite quickly. And it has the overwhelming advantage that if it is supplied with enough REM remarks it is possible for another programmer, given a certain amount of intelligence mixed with rat cunning, to be able to follow precisely what you have done with the program and amend, up-date, modify or debug it.

Nevertheless, there is no doubt the fastest way to implement a program and make the best use of memory is to write in Assembly language. And this is not easy.

In fact, for the vast majority of us it is effectively impossible.

Plainly, there has to be a solution to this problem. One way round it is to write the vast majority of the program in BASIC, only struggling with Assembly in the short parts of the program that need speed.

But some of us, me especially, are too dim even to be able to handle that.

Now, galloping out of the sunset on a white horse, comes MicroSparc with a computer language for the Apple called MacroSoft.

It is nearly as easy to write as BASIC.

After it has been written and thoroughly debugged it is translated directly into stand-alone machine language programs.

Is this then the answer to all our dreams? Is this the high speed language that we have all been praying for?

The answer would appear at first glance to be probably yes.

To give you the background of how MacroSoft works we need to look at some of the background of languages. And for this we can do not better than quote directly from the book of instructions.

Every computer program written in a higher-level language has to be translated into what is called machine language before the computer can run that program. Almost every other computer language falls into one of two categories. Those categories are: Compiled languages and Interpreted languages.

Compilers translate a program from a higher level language entirely into machine language before running the program. Since compilers translate the program before running it, the translated program can be saved and run over and over without having to translate it each time it runs.

Interpreters translate the program into machine language as it runs, statement by statement each time it runs. Interpreters tend to be very slow since they must translate each statement of the program every time that statement is executed. Applesoft and Integer BASIC are interpreted languages.

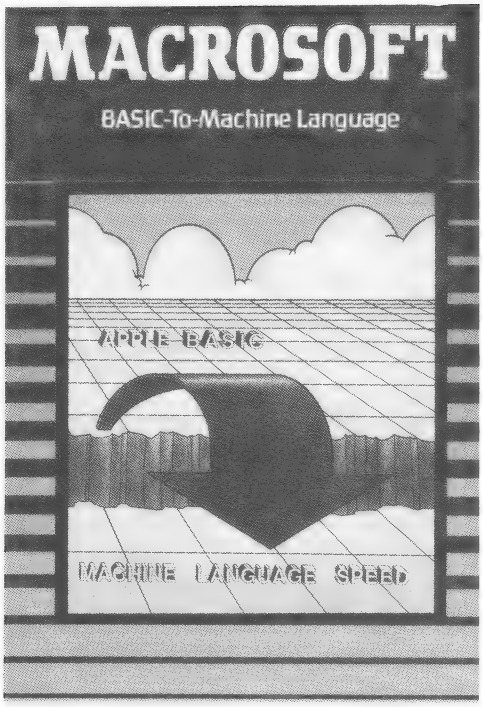
Once a program is compiled, it tends to run very quickly, since it is in machine language form.

Assembly language is generally considered to be the most efficient way to program a computer. Assembly language is only one short step away from machine language, and tends to be very fast. The trouble with assembly language is that it is difficult to learn and use.

This brings us back to MacroSoft. MacroSoft is a high-level language like BASIC that is assembled directly into machine language.

MacroSoft is made up of a library of assembly language macros. A macro is a chunk of assembly language that is used just as you would use a subroutine in BASIC. There are a few subtle differences between the way macros are used and the way subroutines are used in BASIC.

Macros are more "instant" than subroutines, for example. When you use macros in your assembly language program, you don't have to worry about things like line numbers, since the macro assembler handles all of the chores of integrating the macro into your program for you.



With a large enough library of macros to choose from, you could write programs that consisted almost exclusively of macros. Think of the time that would save. Any mundane chore could be reduced to a macro, and anytime you needed to perform that particular chore in any program you were writing, you could simply call up that macro, and it would become part of your program.

Which brings us back to MacroSoft. MacroSoft gives you a large library of pre-written macros that look very much like BASIC statements. You can use these macros to write programs entirely in MacroSoft without having to know any assembly language. Or you can add MacroSoft commands to your assembly language programs.

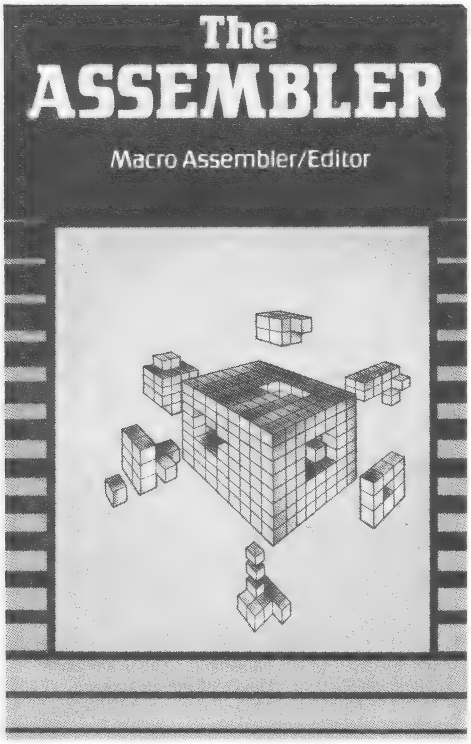
In many ways MacroSoft is better

than compiled Applesoft. All existing Applesoft compilers turn your short program into a very long one, because the compiler has to include a copy of every one of the Applesoft routines along with your program when it is compiled. This is called "adding the Run-Time Package". For all of the Applesoft compilers, the run-time package is very big. Say you have a short (1 KBYTE) Applesoft program that you want to compile. After the compiler is through with your program, it will have grown to over 15 KBYTES!

MacroSoft does not have a run-time package. When you assemble a MacroSoft program, only the routines that are required to make your program run are added to your program. This saves a great deal of memory over a typical compiler if you are only using a few features of the language.

Since MacroSoft is not an Applesoft compiler, but a new language, it has powerful features that Applesoft lacks, like:
IF-THEN-ELSE
REPEAT-UNTIL
WHILE-WHILEN

MacroSoft has been written to resemble Applesoft as much as possible. This will make it easy for you to rewrite your Applesoft programs in MacroSoft.



A MacroSoft program is entered into memory with the Editor that is supplied with The Assembler. Since MacroSoft is actually a series of macros, your MacroSoft program is assembled directly into machine language. You can intermix MacroSoft with standard assembly language in the same program. You can even customize MacroSoft and extend it to suit your exact needs by writing new macros in assembly language as you need them. You can also assemble MacroSoft programs into machine language which can be used in your Applesoft programs using the Applesoft CALL statement.

MacroSoft's limitations

First of all, to use MacroSoft, you need The Assembler by Micro-Sparc. MacroSoft will not work without it. No other assembler will be able to run MacroSoft.

Second, your Apple II must have Applesoft resident in ROM or RAM if you wish to use any HI-RES or floating point features of MacroSoft. If you don't use any of these features, then your MacroSoft program will run under either Integer or Applesoft BASIC.

Third, because of memory overhead, MacroSoft cannot do much of the error checking that is done by Applesoft. This means that you must be more careful when you write your MacroSoft programs, as they will be more difficult to debug than Applesoft programs.

Fourth, the object programs produced by MacroSoft are larger than equivalent uncompiled Applesoft programs. MacroSoft programs are still shorter than compiled Applesoft programs.

Fifth, MacroSoft is not an Applesoft Compiler. There is no way to translate an Applesoft program into MacroSoft except by hand. To use MacroSoft, you must learn it. If you are already programming in Applesoft, making the jump to MacroSoft will be easy, since MacroSoft looks very much like Applesoft.

That's the end of the quotation from the manual. It is, in my opinion, an honest appraisal of the program, showing its strengths and its weaknesses.

The question before the house is, does it work?

And the answer is an unequivocal yes.

I've been messing around with it now for some time, trying to build up a string of routines which will will lead me away from what my son, the computer programmer, scornfully refers to as "spaghetti progamming".

With MacroSoft producing programs that work briskly in a professional manner, it is only slightly more difficult than writing the same programs in BASIC. True, you suffer from two limitations – the difficulty of easy error trapping and the extra space that the program takes up.

With the extra space I thought I might have some problems in the speed with which the program loaded, but this seemed not to be the case. I used both David DOS and Diversi DOS in an effort to make it load even faster, but the increase in speed did not apear to me to be significant. Perhaps I was doing something wrong – I often do.

My extremely biased view is that MacroSoft is a major logical step forward in programming languages. It allows klutz like myself to step from the ranks of the amateur Basic hackers up into an area where the programs being produced are professional to a degree.

If I say I think the program is a revolution in microcomputer programming, everyone is going to throw bricks at my head. But it is the simple truth.

I've tried Pascal and Lisp and even Logo but they were either too difficult, too complicated or not flexible enough for my needs.

With MacroSoft I appear to have found the promised land until somebody comes up with something different. And in future all the programs that I write will go straight into MacroSoft if it is at all humanly possible. I can offer no higher recommendation than that.

The program is imported into Australia by the ubiquitous Ken Guntar of CompuMusic, (02) 692 9293, and I think it is about time he changed the name of his company to show his wider range of interests.

How about CompuTotal? ☐

What's happening with the Macintosh?

Filevision

We are only now just beginning to see some of the quite astounding power and capability of the Macintosh being put to full use, in programs which have been written specifically for the Mac by programmers who actually understand the concept of the machine.

Peace to Bill Gates Jr whose company MicroSoft produces Multi-Plan. That may be a magnificent spreadsheet program, but it is an adaptation, albeit an extremely good one, of an existing program for the Macintosh. It was not created initially and specifically for the machine.

The same applies to his word processing program "The Word", likewise to MicroSoft's "Chart" program. I have no doubt we will be seeing many specific programs for the Macintosh from MicroSoft because Bill Gates was one of the great Macintosh supporters in the early days and probably knows more about the concept and the possibilities of the machine than anyone outside Apple. And more than most people inside Apple, if you think about it.

Filing images

The first program to come our way which really got the adrenalin going is "Filevision" from a company called Telos in the US.

What does the program do?

First and most important, it puts pictures and information together in a filing system.

Stop there and let us think about it for the moment.

Although it is true there have been some computers that could file pictures before, they normally needed a large amount of memory per picture and retrieving them was an exercise in itself.

With "Filevision" the creators have actually produced a program that will file, store and retrieve images with ease. Not consummate ease. But ease, nevertheless.

And it will do more, for it is also a graphic program that allows you to draw with the same facility as you deal with words using a high powered word processor.

The program works in a way that is familiar to Macintosh owners and will undoubtedly become familiar to users of all other microcomputers as icons and the damned mouse disease spreads.

You use the mouse to move the pointer once the program is booted to select a file.

Already on the disk are two files. One is labelled "tour", the other "map".

This is the sort of thinking that characterises the new software coming on stream for the Apple. Each program has a set of built-in guides and instructions, which you can easily wipe once you have become adjusted to the program and all its uses.

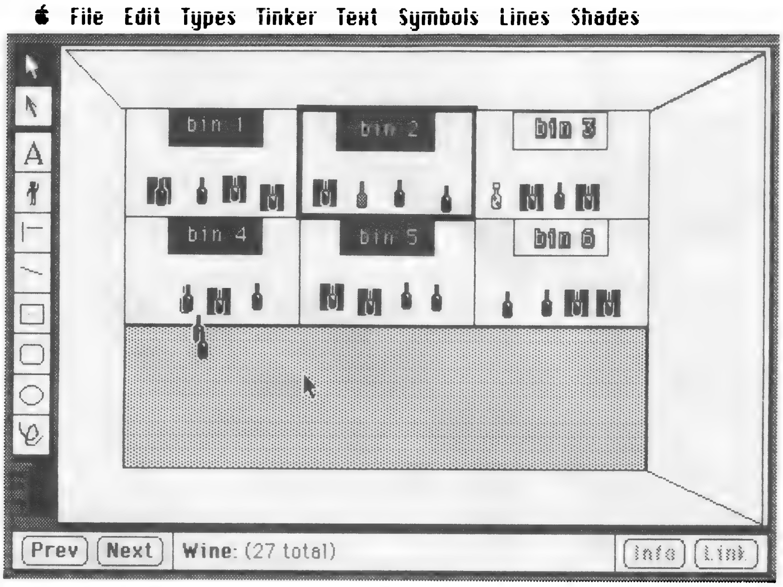
If you select "tour" you find yourself in a wine cellar.

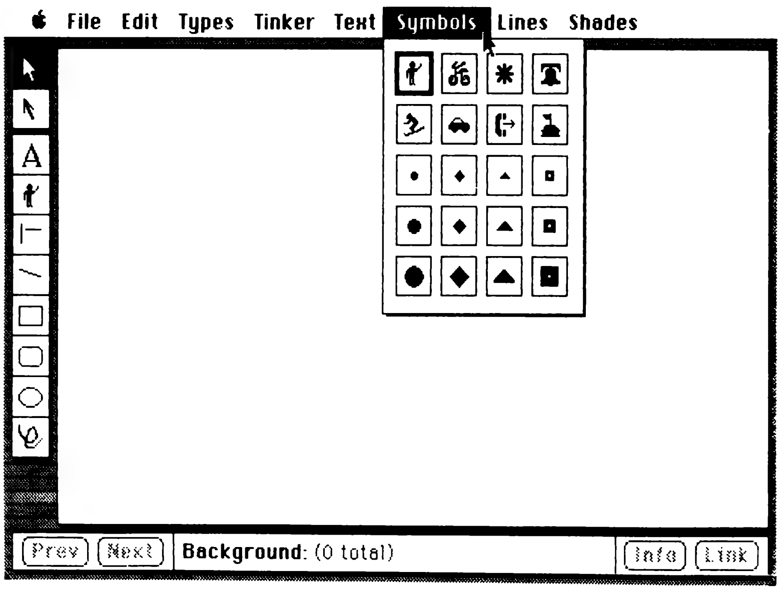
Alas, the wine is only in the computer's mind, and the wine contained therein is purely illusory.

Each bottle is, in effect, a file within the system, each being separately recorded. You can move the pointer to an individual bottle of wine and click, there is all the information about that particular drop entered as if from a wine cellar book.

You can do pretty well anything with this vinous illustrated database and in doing so, get a feeling for the power and capability of the program.

You can, for example, select one





wine bottle and redesign its shape. If like me, and as always, you go too far, you get a polite error message that says:

"The shape requires too much memory to stretch. It will remain unchanged". (It is a pleasant thought that the Macintosh has heralded in a new era of relatively polite and totally comprehensible error messages. They certainly beat the dreaded "Syntax error" of Apple DOS and the even more appalling "Error in Bdos 14" of CP/M and MS-DOS).

To show off, I selected one wine bottle and redesigned its shape and gave it a label. To do this I had to keep zooming up to make parts of the bottle large enough for me to play around with the pixels. There is no doubt given enough time, patience and computer memory you would be able to redesign every bottle in the cellar to copy, within reason, any bottles you had on hand.

Macdraw

Once you have got the hang of it at this stage you can start using some of the MacDraw support programs to build up your own library of images and designs.

The limit of your endeavours is not, strangely, restricted by your artistic ability.

As it happens, I have none.

Because what you are able to do is take other preformed images and add, move, enlarge, amalagamate, shade and other jolly things before you return them to the file's memory.

Bear in mind that this is actually a database which just happens to allow you to use drawings as well as normal data.

Already there are cameras available which will digitize any drawing and allow you to store it in the computer. These will be in Australia early next year and will be relatively cheap – under $500.

In the States you can transfer an image into your machine by feeding it through a modified "ImageWriter" printing machine, but that strikes me as the hard way of going about it.

When these cameras are widely available you will be able to store almost any monochrome image and call it up from your visual database with ease.

Using "Filevision", you come to the obvious conclusion that the Macintosh, to be used to its maximum potential, really needs a hard disk.

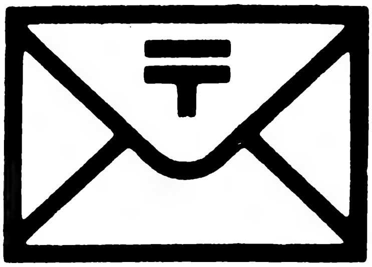
Measuring the prices of hard disks on a per kilobyte basis, the thought of a Davong 40 Megabyte hard disk at something under $5,000 seems extremely attractive – this works out at less than 15 cents a kilobyte.

"Filevision" is, in my opinion, the first breakthrough program for the Apple Macintosh. It uses the intelligence and the built-in power of the Macintosh with elegance and style. No doubt we will be seeing more programs of this type in the near future.

Available from Compumusic, (02) 692 9293 or 692 9875. ☐

LETTERS

Letters



Dear Sir,

Love your magazine – it is a change to read one that you can understand (and enjoy some humour, too!).

I tried out Peter Birthisel's "mailing list program" (Vol 1 No 5) and am still trying to iron out the bugs. I am only a beginner so am making slow progress. Altered line 430, as the program kept returning to 340 and the "creating a file" bit. Why wasn't there a CLOSE instruction around 740-760?

Would love some advice (I have an Apple //e). Please find enclosed cheque for subscription and I will look forward to the next issues.

Pat Horley
Freemans Reach, NSW

Ed: The "mailing list program" supplied in our 5th issue is everything it purported to be. The problem was no clear instructions on how to use it were included. After running the program you will have the option of (c)reating a new list, (u)sing an existing list or (e)nding the program. The procedure to follow is to firstly (c)reate a list, which involves naming the list, after which you return to the "options". Now select (u)se to work on the list whose name you have just created. Be sure not to use the same name twice by mistake as you will loose the original list by that name.

When you go back to the main menu you can add or delete names, list or print files and modify existing lists. Removing the goto statement in line 430 would do little as there is a goto in line 460 which takes you back to 420 and asks for input from your options. Finally there is no "close" command around lines 740-760 because the disk drive is left "open" to "read" and "write" to disk as necessary throughout the use of the program. You will find the "close" command at line 2890 which is accessed from the main menu as "6---CLOSE CURRENT FILE".

When you are keying the program in, you must remember to use (CTRL-M) in the inverted commas in lines 870 and 2290. This involves the use of the (ESC) and (I) keys as well. After keying the first inverted comma press (CTRL-M), this is the same as pressing (RETURN). So now you should find yourself on the next line. The next thing to do is to press (ESC) followed by (I) until you reach the line above. Now use the right arrow key until you get the space just after the first inverted comma and continue keying the rest of the line. ■

Computer brainfood

Millionaire, the Stock Market Simulation

Who wants to be a millionaire? I don't. Well, not if I have to play "Millionaire, the Stock Market Simulation" produced by Blue Chip Software.

The story has been put about that "Millionaire" has achieved cult status in the United States. I'm not sure I believe that.

Let us look at it step by step. It is beautifully packaged with extensive use of gold ink to make you feel suitably rich. The documentation, also in a gold cover, is a triumph of the designer's art, and is informative about the way in which American stock markets are run. Enclosed is a leaflet full of rapturous responses from critics, most of whom are only identified by their initials. There is also a third piece of paper which contains one whopper of a lie. It says: "Place your Millionaire diskette in drive D1 and turn the power on. After a short pause, you may play Millionaire."

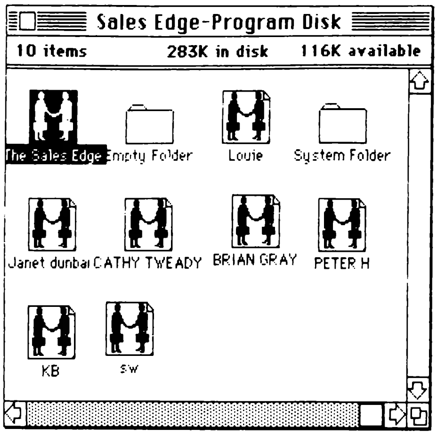
Now, it all depends what you mean by short pause. According to my stopwatch it is 6 minutes and 32 seconds. I don't call that a short pause. Not by any stretch of the imagination.

The game has no graphics. Just lists of stocks and shares, and news flashes which frequently contain mistakes. No financial journalist that I know regularly spells campaign "campiagn".

If this program lived up to its packaging it would be a bobby dazzler. But it is nothing of the sort. It might be a good tool for teaching people how the stock market works, provided that they were very serious about the whole matter.

But there is none of the frenetic excitement, the adrenalin driving force of the stock exchange built into this game. I have had more excitement playing whist with my uncle and aunt.

Definitely a program that needs several revisions before it can be recommmended.



Human Edge software

Probing your mind

I have always been somewhat suspicious of pseudo-pyschology. In my book it fits rather neatly between astrology and Tarot cards.

When I was sent a complete set of programs by Ken Gunter of CompuMusic (he is really going to have to do something about that name) produced by "Human Edge Software" in the United States which purported to unlock the secrets of the mind I was naturally suspicious.

The first program I tested, and tested thoroughly, was "The Sales Edge". What the publicity promised was that if I followed the instructions carefully the result would be a complete scenario on how to handle a sales meeting.

As it happens I was about to make a sales pitch so, in a spirit of deep suspicion and disbelief, I booted the disk and followed the instructions.

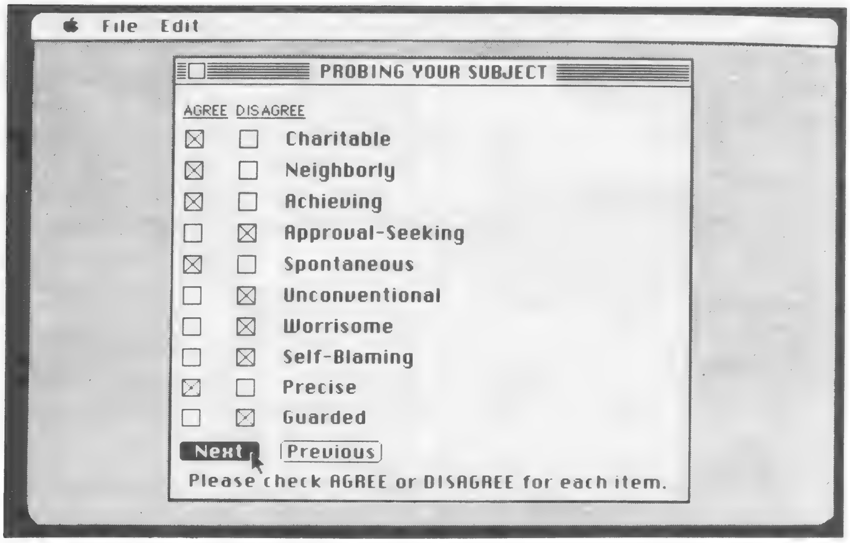
First of all it asked me to make an assessment of myself by answering yes or no to about a hundred reasonably penetrating questions.

Then it asked me to give my opinion on various aspects of my prospect's character.

After a few minutes it gave me a complete printout showing exactly how to approach the sale and how to go for the close.

And it worked. Like magic.

So I tested it again and again and

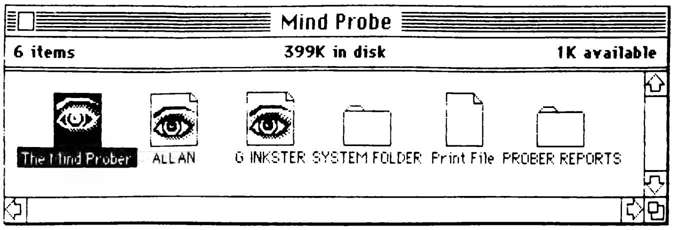


PROBING YOUR SUBJECT

AGREE	DISAGREE	
☒	☐	Charitable
☒	☐	Neighborly
☒	☐	Achieving
☐	☒	Approval-Seeking
☒	☐	Spontaneous
☐	☒	Unconventional
☐	☒	Worrisome
☐	☒	Self-Blaming
☒	☐	Precise
☐	☒	Guarded

Please check AGREE or DISAGREE for each item.

NOTES: *Be sure to respond to every adjective. The tool can produce a report only when it has a complete assessment.*
To change any response, just click the other box.
When you've completed a dialog, click NEXT *to continue.*
To return to a previous page, click PREVIOUS.
When you've completed the assessment, click SAVE *to save the file on the diskette.*



still kept coming up with excellent results.

At this point I was rapidly becoming a convert, and started using the other programs in the series (they are available both for the standard Apple and for the Macintosh) and the results were quite amazing.

The titles currently available are The Sales Edge, The Management Edge, The Negotiating Edge and Mind Prober. They all work on roughly the same basis which appears, on the evidence that I have before me, to be fundamentally sound. I have already found out several things about myself that I would rather not have known about, thank you very much. Hopefully it will improve my behaviour and my relationships with other people, although it may be a bit late for that now.

Available from CompuMusic, (02) 692 9293 or 692 9875. ☐

Knoware — terrific

And now for something totally different.

Because you read this magazine it can be presumed that you already know and love computers, especially Apples. Good on you.

However, out there in the real world there are thousands of people who are suffering from computer phobia, and feel that if they come too close to a computer it may bite them. "Apple bites business executive" would, now I think of it, make a great story.

To help these poor benighted blind business executives, a company in America has come out with a package called "Knoware" which is, let me assure you, the best thing since sliced bread.

It is a three disk package and, at $150 retail, a touch pricy. It is imported by Advanced Systems Australasia (02 698 4999).

What the program does is teach you how a computer works in the most amusing and droll way imaginable. You start off as an office boy earning $50 a month and try to end up as Chairman of the Board and a millionaire. It should happen to all of us.

Each time you are promoted the computer plays a happy tune and suitable and ornate graphics appear on the screen.

So as a game it is quite magnificent.

But, and this is where the value for money comes in, as you play the game you learn the basics of using a word processor, amending a BASIC program, using graphics, working with a database, accessing financial programs and working problems through. It is a totally painless form of tuition.

Incidentally, while you are fighting your way up the corporate ladder, you are playing the stockmarket. And that is the only part of the program that I feel is somewhat lacking. Strange that. Perhaps they used the same programmer who wrote the miserable "Millionaire".

I cannot recommend "Knoware" too highly. If you know someone who is scared silly by the thought of a computer then this program will change their lives. Literally. ☐

BACK UP YOUR DISKS

EDD is the most powerful disk duplicator available for your Apple™ computer. Unlike the copycards, which only copy single load programs, EDD backs up your entire disk. EDD can back up more protected software than all other copy programs or copycards put together. Since EDD is automatic, you will no longer have to change parameters to duplicate most disks, although every parameter is fully documented in our extensive manual. We also provide updated EDD program lists.

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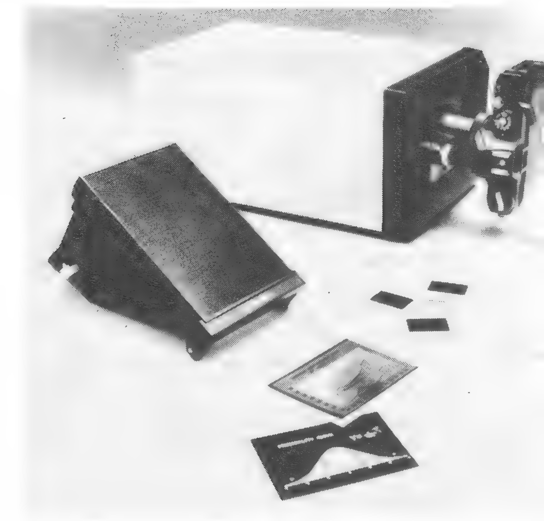
Pictures on a page Polaroid Palette

by Duncan McCann



The greatest advantage of graphics on personal computers is that they can fulfil that old maxim – a picture is worth a thousand words.

Because the pictures produced by computers get better and better every day. With some of the new and quite amazing integrated programs, the quality of graphics and design that can be produced on a monitor – especially a high quality monitor – are of a new generation altogether. These graphic designs can show trends, highlight problems, project profits, show designs – all to a standard that was hitherto considered impossible.

However, once you have produced your pretty pictures on the screen you have the problem of converting them into images that everyone can see.

Printers and plotters

For this you can use a colour printer which, at the time of writing, is still unsatisfactory, as it can normally only cope with four or five colours and the result, though striking, lacks subtlety.

And it certainly is impossible at the moment to reproduce the striking graphics that some programs engender in all their glorious colour and detail.

It is probable when colour laser printers become available sometime next year we will see the start of a revolution that will allow us to print directly from the computer to a level which will resemble fine art colour printing.

But not yet.

Not yet.

Another solution is to use a plotter.

But although the standards will be higher and the end result more acceptable than is currently possible with a printer, the problem of using what amounts to a linked number of fibre tipped pens to reproduce subtle shades of colour still appears to be insuperable.

Plotters are fine for graphs, technical drawings and maps. That is what they were designed for. But they are less than felicitous when shadings and subtleties of colour are involved.

Direct photography

One other method which has been employed in the past has been to take colour pictures directly off the screen.

Forgetting the problems of glare for the moment, the end result is, sadly, often a travesty of the original – muddying the colours and losing the crisp definition.

Now Polaroid – a company that knows more about colour technology than most – has come up with a solution which looks set fair to solve all the problems of reproducing computer graphics in their full brilliance, sharpness and colour.

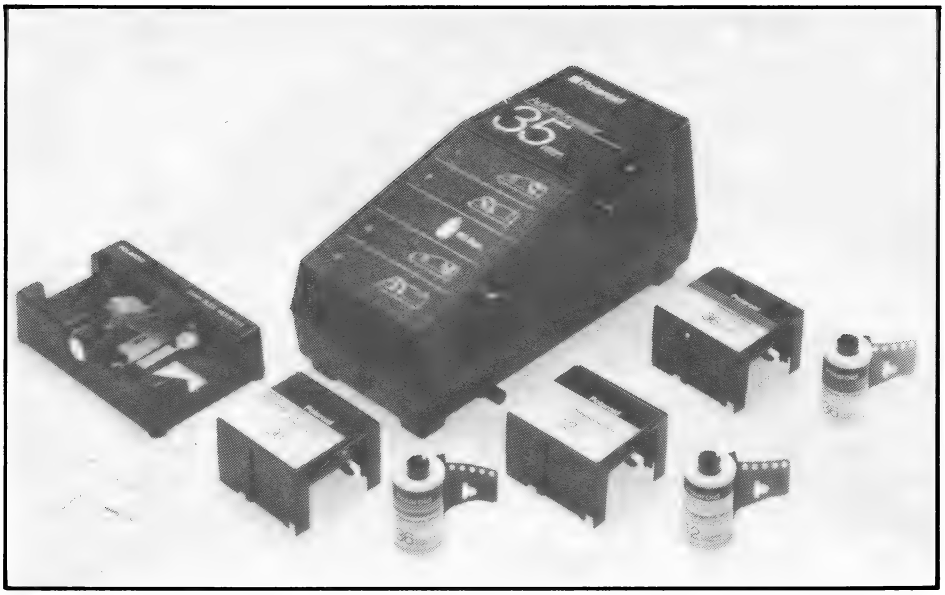
Indeed, in some cases the end result is far better than the original, with an increase in sharpness to the factor of two.

Before I go into how this miracle is achieved, there are one or two points that need to be made.

Firstly, the system as it stands is very much a first stage.

It works, and works well. But it will undoubtedly work a lot better when the proper software programs have been developed to take full advantage of its capabilities.

There are already programs that go a considerable way to achieve this end, but there is no doubt in my mind there are other programs in the



pipeline and when these become available the full power of the Polaroid Palette will be released for the first time.

How it works

The system works as follows.

A signal is taken from the Apple IIe and sent to a monitor especially constructed by Polaroid that has a screen resolution much sharper than is available on the standard Apple. Something of the order of twice as sharp. Those of you who consider that the Apple monitor is not, in itself, a thing of beauty or great scientific achievement are quite right. The Polaroid monitor more than rectifies all its problems.

This image, which comes from the computer in digitised form to the special high resolution monitor, is then photographed using an ordinary 35 mm camera fitted to the front of the monitor. The camera is, as it happens, a Minolta 35mm motor drive, which can be loaded with any colour transparency film you choose, although the obvious choice is Polaroid's instant 35 mm film..

The image is not built up with a one shot exposure, but rather through a series of exposures created by filtering the image and building up the image in much the same way that a printer uses separations.

Any colour film

The film used to record the image can, as I have said, be any colour transparency film, although the Polaroid instant 35 mm film produces very fast results of a fairly high quality.

For the best results you would use Fujichrome (my favourite film of the moment) or one of the Kodak range.

Before you take the photograph with the 35 mm camera you can test the result using a standard Polaroid instant camera, which fits happily onto the Polaroid monitor.

Using this camera you can see with what remarkable fidelity the images are reproduced – in most cases they are better than the images that you can see on the standard screen.

The colour transparency (which is a positive image better known as a slide) of the image can then be projected for viewing, or colour prints can be made from it, or it can be used for printing colour brochures.

Snags

Are there any snags?

Yes. The system requires some getting used to and the matching of the camera to the Polaroid monitor body is, to be brutally honest, a lash-up.

Secondly, programs that can take full advantage of the features of this machine are few and far between.

This situation will undoubtedly be corrected in the future.

However, as things stand this is indeed the state of the art for bringing computer graphics to life, for showing to a wider audience. Sales will be considerable once the advertising agencies and major companies become aware of its many virtues.

I will keep you informed as to the development of software packages for this machine.

These will convert it into an operation with the subtlety and sophistication of an artist's palette – which is presumably why Polaroid chose the name. ☐

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MX Dump

Help for your MX-80 printer

by Stephen Jones

Apple owners with an older MX-80 printer may find that it does not perform as expected in some of the following situations:

* VisiCalc blowing up on printing;
* Database programs giving problems after 40 columns;
* Commercial print utilities not working;
* Control I BON not giving 80 column listings – this last can be regarded as an acid test for the problem.

(By the way, a POKE 1656+slot,0 will give your 80 column list).

If you are plagued in this way the problem probably lies with your printer interface card being an "Epson 8132" type and you have some choices:

1) If you can afford it, replace the interface card with one that passes the "acid test" above. All your problems should then disappear. Try before you buy.

2) If you can't afford the previous course, or if the waste involved goes against the grain, then try to find where and how you can replace the offending ROM chip on the card. The only place I know of is in the UK. Have fun.

3) Go to "Windfall" May 1983 page 50 for information on the problem and on the ways to work through and around it. The following is derived from information in that article and will allow you to dump graphics screens. You will still not be able to use those commercial graphics utilities which have let you down before unless you can modify the source code.

"MXDUMP" can either be used alone to produce graphics dumps (in the absence of other utilities or smart interface cards) or the routine can be within an Applesoft program. The user will need to fill a graphics screen and to ready the printer. MXDUMP will print the graphics as requested. Options are provided to print screen 1 or screen 2, and to allow an inverse print. The explanation of the program will not be given here, but once you see how it works you will no doubt get a wealth of information from the 8132 card documentation.

MXDUMP may be used as a separate program after quitting a graphics generating program – without turning the power off. (Hitting reset at an appropriate time may do the job.)

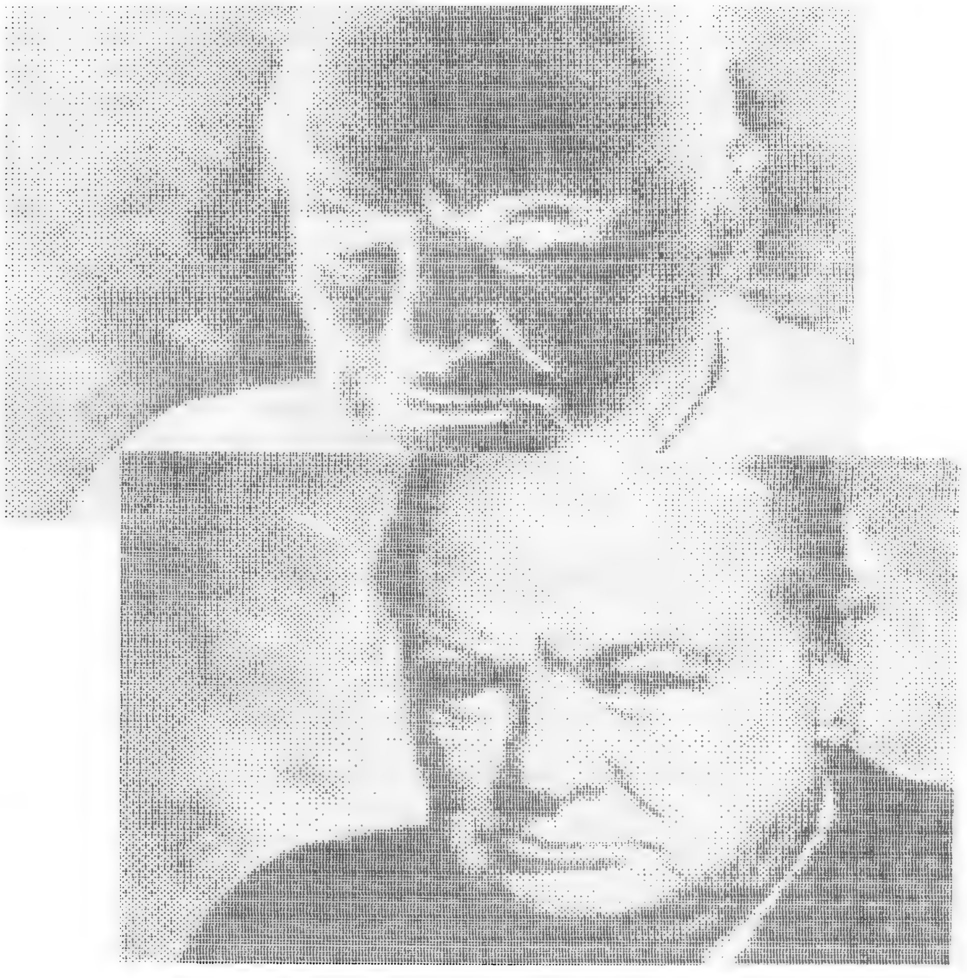
A picture saved on disk as a binary file may be loaded directly into graphics screen 1 or 2 by entering:

```
BLOAD Picturename,A$2000  Ret
(Screen 1)
BLOAD Picturename,A$4000  Ret
(Screen 2)
```

If you don't really understand what this is all about, but have the type of printing problems outlined above – TRY IT! ☐

```
]LIST MXDUMP

5 NORMAL: IN# 0: PR# 0
7 POKE 33,40
10 HOME
105 REM   -MXDUMP-
190 REM ::: ENTER ROUTINE
194 REM
200 A = 1: REM PRINTER SLOT
210 B = 1: REM GRAPHICS SCREEN NO.
215 E = 0: REM NORMAL=0, INVERSE=32
219 PR# A
220 C = 1912 + A:D = B + E
230 Z = PEEK (C)
240 POKE C,D
250 PRINT CHR$ (17)
260 PR# 0
265 POKE C,Z
267 CALL 1002
269 REM
270 REM :::LEAVE ROUTINE
280 END
```



Tips and Techniques

```
STRING   MANIPULATION

10      REM - STRING MANIPULATION
20      REM
30      REM - WITH THE USE OF
40      REM - LEFT$()
50      REM - MID$()
60      REM - RIGHT$()

100 HOME
110 A$ = "COMPUTER.OF.THE.FUTURE"

120      REM - TAKE THE FIRST EIGHT
130      REM - LETTERS FROM THE LEFT
140      REM - HAND SIDE OF A$ AND
150      REM - ASSIGN THEM TO L$
170 L$ = LEFT$(A$,8)

190      REM - TAKE THE MIDDLE EIGHT
200      REM - LETTERS STARTING FROM
210      REM - THE 9TH POSITION AND
220      REM - ASSIGN THEM TO M$
240 M$ = MID$(A$,9,8)

260      REM - TAKE THE FIRST SIX
270      REM - LETTERS FROM THE
280      REM - RIGHT HAND SIDE OF A$
290      REM - AND ASSIGN THEM TO R$
300 R$ = RIGHT$(A$,6)
```

```
330     REM - PRINT THE STRING A$
340     REM - FOLLOWED BY THE NEW
350     REM - STRINGS  L$ M$ R$
370 PRINT A$
380 PRINT L$
390 PRINT M$
400 PRINT R$

420     REM - NOW PRINT A BLANK LINE
430 PRINT

450     REM - NOW TAKE THE STRINGS
460     REM - AND PRINT THEM IN THE
470     REM - REVERSE ORDER
490 PRINT R$
500 PRINT M$
510 PRINT L$
520 PRINT A$

540     REM - NOW RE-ASSEMBLE THE
550     REM - STRING IN THE REVERSE
560     REM - ORDER SO THAT WE HAVE
570     REM - A NEW STRING CALLED B$
590 B$ = R$ + M$ + L$

610     REM - NOW PRINT THE NEW STRING
620     REM - PRECEEDED BY A BLANK LINE
640 PRINT
650 PRINT B$
```

String Manipulation

Comments

String manipulation is a very useful tool to have at your finger-tips. If you can master string manipulation, then you have gone a long way towards mastering the BASIC language. Using the scale below, you can count the number of characters in the string, and their relative positions within the string:-

```
0000000001111111111222
1234567890123456789012
!!!!!!!!!!!!!!!!!!!!!!
A$ = "COMPUTER.OF.THE.FUTURE"
```

```
000000111
456789012
!!!!!!!!!
: Z$ = MID$(A$,4,9) = "PUTER.OF."
```

The 'C' is in position 1, 'M' is in position 3, 'F' is in position 11 and position 17, 'H' is in position 14, etc. To get the first 5 characters of A$ and assign them to L$, your formula will be:-

L$ = LEFT$(A$,5)

To pull out the word '.OF.' and assign it to the string M$, you can count from the left side of the string to the first letter required, which in this case is the period at the 9th position. Next you must count the number of characters you require. In this case four characters are required. Your formula will be:-

M$ = MID$(A$,9,4)

You must separate the components of the formula with a comma, or you will be presented with a SYNTAX ERROR when you try to run the program.

Program and Hi-Res memory conflicts

The easiest way to use Hi-Res graphics with a long Applesoft program is to relocate the program. This way you avoid the problems of program text and variables being stored in the Hi-Res buffers. The following programs will initialize the Apple's memory and RUN your application program. The program will load above the Hi-Res buffer. DOS and CHAIN will continue to load programs there until the system is re-booted or a FP command is executed.

For HGR

```
10 POKE 103,1
20 POKE 104,64
30 POKE 16384,0
40 PRINT CHR$(4);"RUN program"
```

For HGR2 or both pages

```
10 POKE 103,1
20 POKE 104,96
30 POKE 24576,0
40 PRINT CHR$(4);"RUN program"
```

Trace and DOS commands

TRACE won't work with DOS commands unless you define D$ = CHR$(13) + CHR$(3) because DOS expects the control-D to be the first character on a line of output and TRACE does not send out a RETURN.

Disabling reset

The Auto Start Monitor ROM allows the application program to retain control when the RESET key is pressed. The easiest way to take advantage of this is to reset re-run in the Applesoft program.

```
10 POKE 1010,102 : POKE 1011,213 :
CALL-1169
20 REM
30 REM RESET WILL RE-RUN THE
PROGRAM NOW
```

Characters at hi-res

by Robin and Rhett Scott

Have you ever needed to position characters accurately on the hi-res screen? Use of the High Resolution Character Generator (HRCG) gives the facility of putting characters onto the hi-res screen, but only in discrete positions; ie, in the text grid of 24 X 40 positions. The core of this program, however, allows a character to be positioned in nearly any one of the hi-res screen positions; ie, in a grid of 275 X 185 positions!

The characters (60 in total) have been coded on a 5 X 7 dot matrix in a "relocatable" format. This means the character has been coded in terms of x and y; with the reference (x,y) being the centre top dot. All that has to be done to draw the character, is to specify x and y and to GOSUB n (where n is the statement number).

The characters are actually PLOTted on the hi-res screen; in some cases nearly dot by dot. (You cannot draw true diagonal lines on a hi-res screen!)

The listing includes all the characters (plus one) on the Apple II keyboard. REM lines have been included to identify each character. The listing includes a short demo program.

Have fun copying the listing! ☐

Program listing — High Resolution Character Generator

```
10 P = 1:Z1 = 1:Z2 = 1:Z3 = 1
20  HGR2 : HCOLOR= 3:X = 130:Y =
     65
30 P = P + 1
40  IF P = 3 THEN 110
50  IF P = 4 THEN 140
80  ON Z1 GOSUB 200,230,260,290,3
     20,350,380,410,440,470,30
90  FOR Q = 1 TO 500: NEXT Q
100 Z1 = Z1 + 1: HGR2 : GOTO 80
110  ON Z2 GOSUB 500,530,560,590,
     620,650,680,710,740,770,800,
     830,860,890,920,950,980,1010
     ,1040,1070,1100,1130,1160,11
     90,1220,1250,30
120  FOR Q = 1 TO 500: NEXT Q
130 Z2 = Z2 + 1: HGR2 : GOTO 110
140  ON Z3 GOSUB 1280,1310,1340,1
     370,1400,1430,1470,1500,1530
     ,1560,1590,1620,1650,1680,17
     10,1740,1770,1800,1830,1860,
     1890,1920,1950,1980,3000
150  FOR Q = 1 TO 500: NEXT Q
160 Z3 = Z3 + 1: HGR2 : GOTO 140
200  REM  "1"
210  HPLOT X - 1,Y + 1 TO X,Y TO
     X,Y + 6 TO X - 1,Y + 6 TO X +
     1,Y + 6
220  RETURN
230  REM "2"
240  HPLOT X - 2,Y + 1: HPLOT X -
     1,Y TO X + 1,Y: HPLOT X + 2,
     Y + 1 TO X + 2,Y + 2: HPLOT
     X + 1,Y + 3 TO X,Y + 3: HPLOT
     X - 1,Y + 4: HPLOT X - 2,Y +
     5 TO X - 2,Y + 6 TO X + 2,Y +
     6
250  RETURN
260  REM  "3"
270  HPLOT X - 2,Y + 1: HPLOT X -
     1,Y TO X + 1,Y: HPLOT X + 2,
     Y + 1 TO X + 2,Y + 2: HPLOT
     X,Y + 3 TO X + 1,Y + 3: HPLOT
     X + 2,Y + 4 TO X + 2,Y + 5: HPLOT
     X + 1,Y + 6 TO X - 1,Y + 6: HPLOT
     X - 2,Y + 5
280  RETURN
290  REM "4"
300  HPLOT X + 2,Y + 4 TO X - 2,Y
      + 4: HPLOT X - 2,Y + 3: HPLOT
     X - 1,Y + 2: HPLOT X,Y + 1: HPLOT
     X + 1,Y TO X + 1,Y + 6
310  RETURN
320  REM "5"
330  HPLOT X + 2,Y TO X - 2,Y TO
     X - 2,Y + 2 TO X + 1,Y + 2: HPLOT
     X + 2,Y + 3 TO X + 2,Y + 5: HPLOT
     X + 1,Y + 6 TO X - 1,Y + 6: HPLOT
     X - 2,Y + 5
340  RETURN


]

350  REM "6"
360  HPLOT X + 2,Y + 1: HPLOT X +
     1,Y TO X - 1,Y: HPLOT X - 2,
     Y + 1 TO X - 2,Y + 5: HPLOT
     X - 1,Y + 3 TO X + 1,Y + 3: HPLOT
     X - 1,Y + 6 TO X + 1,Y + 6: HPLOT
     X + 2,Y + 5 TO X + 2,Y + 4
370  RETURN
380  REM "7"
390  HPLOT X - 2,Y TO X + 2,Y TO
     X + 2,Y + 1: HPLOT X + 1,Y +
     2: HPLOT X,Y + 3: HPLOT X -
     1,Y + 4 TO X - 1,Y + 6
400  RETURN
410  REM "8"
420  HPLOT X - 1,Y TO X + 1,Y: HPLOT
     X + 2,Y + 1 TO X + 2,Y + 2: HPLOT
     X + 2,Y + 4 TO X + 2,Y + 5: HPLOT
     X + 1,Y + 6 TO X - 1,Y + 6: HPLOT
     X - 2,Y + 5 TO X - 2,Y + 4: HPLOT
     X - 2,Y + 2 TO X - 2,Y + 1: HPLOT
     X - 1,Y + 3 TO X + 1,Y + 3
430  RETURN
440  REM "9"
450  HPLOT X - 2,Y + 5: HPLOT X +
     1,Y TO X - 1,Y: HPLOT X - 2,
     Y + 1 TO X - 2,Y + 2: HPLOT
     X - 1,Y + 3 TO X + 1,Y + 3: HPLOT
     X - 1,Y + 6 TO X + 1,Y + 6: HPLOT
     X + 2,Y + 5 TO X + 2,Y + 1
460  RETURN
470  REM  "0"
480  HPLOT X - 1,Y TO X + 1,Y: HPLOT
     X + 2,Y + 1 TO X + 2,Y + 5: HPLOT
     X + 1,Y + 6 TO X - 1,Y + 6: HPLOT
     X - 2,Y + 5 TO X - 2,Y + 1: HPLOT
     X + 1,Y + 2: HPLOT X,Y + 3: HPLOT
     X - 1,Y + 4
490  RETURN
500  REM "A"
```

```
40 REM
100 POKE 1010,191 : POKE 1011,157 :
CALL-1169
110 REM
120 REM    THIS IS BACK TO
NORMAL
```

SYNTAX ERROR when the program is run

Applesoft requires that the first byte in the program storage area is a zero. Some machine language program's don't leave a zero there and Applesoft may react strangely. Here's how to initialize that byte, even if the program memory pointer has been changed.

```
POKE PEEK (103) + PEEK (104) *
256,0
```

Garbage collection

If your Applesoft program sometimes mysteriously stops for up to five minutes in the middle of a program and then just as mysteriously resumes as if nothing had happened, then read on. When Applesoft reassigns a string value it assigns the new value just below the last one. Soon all of the free memory is full of old strings that aren't being used. When there's no room for one more string then Applesoft sorts through all of its strings, one at a time, and throws out any unused ones. This is called Garbage Collection and it can last up to five minutes depending on how much memory is available and how many string variables there are. The more string variables there are the longer it will take. Applesoft gives no warning of garbage collection, it just does it and there is no way to prevent it.

Applesoft also does garbage collection when it encounters the FRE (0) function, and this gives us a tool for at least warning the user that the computer will be busy for a while. Applesoft checks the value of PEEK (112) - PEEK (110) and when it is less than one, Applesoft does its garbage collecting. So we can check that value to decide when to PRINT a "DON'T WORRY" message and then use A = FRE(0) to force garbage collection. Here is an example line you could use in your program.

```
1000 PEEK (112) - PEEK (110) & 2
THEN PRINT "STANDBY"   A =
FRE(0)
```

Overflow error in first line of program

If the first number in the first line of the first program run after booting DOS is a negative number then Applesoft might return an OVERFLOW ERROR. This usually occurs when the first statement is CALL -936 which can be replaced with HOME.

Saving room when BSAVING Hi-Res

One sector can be saved on the disk for each Hi-Res screen that you save if you save it with a length of $IFFB instead of $2000. The reason is that the starting address and length of the binary file are stored as the first 4 bytes of the file. Saving a file with a length of $2000 actually stores $2004 bytes and requires another sector. The syntax will now be:

```
10 D$ = CHR$(4)
100 PRINT D$;"BSAVE HIRES-1,
A$2000, L$1FF8"
200 PRINT D$;"BSAVE HIRES-2,
A$4000, L$1FF8"
```

Binary file address and length parameters

The starting address and length of a binary file are loaded into two registers in memory when the file is loaded. Page 144 of the DOS Manual has the addresses to look at for this information. To find the starting address and length of the FID program on the master diskette:

```
BLOAD FID
PRINT "ADDRESS = "; PEEK
(43634) + PEEK (43635) * 256
PRINT "LENGTH = "; PEEK (43616)
+ PEEK (43617) * 256
```

which would return the starting address of 2051 and a length of 4686.

BRUN HELLO

When DOS is booted it will "RUN" the program that was in memory when the diskette was initialized. You can change the DOS so that it will "BRUN" the HELLO file instead. In a 48K Apple change the byte at $9E42 from $06 to $34. The following sequence of commands will create a disk that will BRUN HELLO when it is next booted. First put a blank diskette in the drive.

```
CALL-151
9E42:34
3DOG
INIT HELLO
DELETE HELLO
BLOAD "binary program" (from
another diskette)
BSAVE HELLO (on the new diskette)
```

BASIC suggestions

To center a printed message simply use a string variable and let the computer do the rest, like so:

```
100 A$ = "APPLE-Q"
110 PRINT SPC((40 - LEN(A$)) / 2);
A$
```

Alternatively you can use:-

```
120 PRINT TAB((40 - LEN(A$)) / 2);
A$
```

or you can use

```
130 HTAB ((40 - LEN(A$)) / 2): PRINT
A$
02AO>yz <<
```

Enter this program:

```
10 A = 1
20 PRINT A
30 A = A + .01
90 GOTO 20
```

Type RUN. Do you notice anything unusual, anything you didn't expect? Here is the algorithm for two decimal places. Add it to the program.

```
40 A$ = STR$(A$)
50 FOR J = 1 TO LEN(A$)
60 IF MID$(A$,J,!) = "." THEN 70
65 NEXT J
70 IF LEN(A$) = J + 2 THEN A$ =
LEFT$(A$,J + 2)
80 A = VAL(A$)
90 GOTO 20
```

Would you like a list of CHR$(N) printed for you to study? Here is a nice little program that will do it for you.

```
10 TEXT : HOME
20 C = 0
30 FOR N = 1 TO 255
40 C = C + 1
```

```
50 PRINT "# ";N;" = ";CHR$(N),
60 IF C = 60 THEN C = 0 : PRINT
"ANY KEY" : GET AN$ : HOME
70 NEXT N
```

If you have a printer you can use this program to print these out so that you have a permanent hard copy to review at your leisure by adding lines 5 and 80:

```
5 D$ = CHR$(13) + CHR$(4) : PRINT
D$; "PR#S"
80 PRINT D$; "PR#0"
```

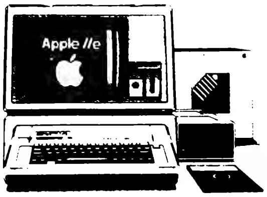
I hope you find these routines of some use. □

PEEKS, POKES and CALLS

If you ever have the misfortune to lose DOS while your program is running, go to the line number where DOS crashes and insert CALL 1002.

When outputing to your printer have you ever tried to HTAB or TAB( ) to a position greater than 39 ? Try POKE 36, (number).

CALL -922	issue line feed
CALL -912	scroll text 1 line
CALL -868	clear from cursor to end of line
CALL -875	clear entire text line
CALL -384	INVERSE
CALL -380	NORMAL
CALL -211	print ERR and ring bell
CALL -198	ring bell
CALL -1205	set normal text window
CALL -936	HOME
PRINT (PEEK(978)+35) /;"K"	print memory size
PRINT PEEK (222)	print ONERR error code
POKE 82,128	make cassette program auto-RUN when loaded
POKE 216,0	cancel ONERR
POKE 1014,165 : POKE 1015,214	make "and" list
POKE 2049,1	make first program line list repeatedly
POKE 44505,234 : POKE 44506,234	show deleted file names in catalog
POKE 50,(random number)	scramble text output
POKE 214,255	make disk program run when any command is issued



Graphics text writer

by Peter Bothart

In answer to the question of how to write text anywhere on the graphics screen, my answer is to use a shape table. Capital letters and numerals are defined as shapes in a 5 by 7 matrix and they are placed on the Hi-Res screen with the DRAW statement.

It can be done as follows: the shape table is quite long and care must be taken when entering it into memory. Start off by typing CALL-151 (from Applesoft BASIC) to enter the monitor. You should now see the * prompt.

Now type the listing as shown. Remember to replace the hyphens with colons. It is unnecessary to enter the line numbers after 6000 – the monitor does this automatically.

When you have finished, check each line number very carefully for errors.

If all is correct, get back to BASIC with CONTROL-C. Now type BSAVE HTEXT, A$6000, L$480. The shape table is now saved as a binary file called HTEXT, which takes up six sectors on the disk.

To use the shape table, your BASIC program must contain the following statements in order to load the shape definitions:

You must always put in the poke statements because these are the pointers to the shape table's address.

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```
]NEW

]BLOAD HTEXT,$6000,L$61D8

SYNTAX ERROR

]BLOAD HTEXT,$6000,$61D8

SYNTAX ERROR

]CALL -151



*$6000.61D8

**
]CALL:-151

*6000.61D8

6000- 36 00 4B 00 59 00 63 00
6008- 6E 00 79 00 83 00 8E 00
6010- 9B 00 A3 00 B1 00 BD 00
6018- C8 00 D5 00 DF 00 EA 00
6020- F7 00 00 01 0C 01 18 01
6028- 21 01 29 01 35 01 3D 01
6030- 49 01 55 01 60 01 6A 01
6038- 77 01 82 01 8D 01 95 01
6040- A2 01 AA 01 B6 01 C1 01
6048- CB 01 00 00 29 2D 20 24
6050- BC 1E 1E 1E 24 24 0C 2D
6058- 2F 00 2D 2D 3F 24 24 24
6060- 17 1E 1E 00 AC 2D 25 D8
6068- 63 65 E4 3F 17 16 00 A8
6070- 2D 05 Eu 1C 0C 0C 3C 3F
6078- 2F 00 24 3D 3F 27 0C 0C
6080- 0C 36 36 00 A8 2D 05 20
6088- E4 3F 27 2C 2D 3D 00 29
6090- 2D 20 1C 3F 37 26 24 0C
6098- 0C 2D 2F 00 21 64 0C 0C
60A0- 3C 3F 2F 00 20 95 2D 05
60A8- 20 1C 3F 07 20 0C 2D 15
60B0- 26 00 2D 05 60 24 E4 3F
60B8- 17 76 2D 2D 00 24 24 64
60C0- 2D 15 36 3F 2F 2D 36 26
60C8- 00 24 24 24 2D AD F6 3F
60D0- 2D 15 F6 3F 3D 00 20 24
60D8- 64 2D 15 96 F2 3F 3D 00
60E0- 24 24 24 2D AD 36 36 1E
60E8- 3F 3F 00 2D 2D DC 1B 64
60F0- 09 3F 27 24 2D 2D 2F 00
60F8- 24 4C 39 3F 24 2C 2D 3D
6100- 00 20 24 64 2D 15 16 2F
6108- 36 3E 3F 3D 00 24 24 24
6110- 95 2A AD 12 24 24 24 26
6118- 00 29 3D 24 24 24 2F 3D
6120- 00 A8 2D 20 24 24 2F 3D
6128- 00 24 24 24 4D F1 1E 1E
6130- 0E 0E 0E 0E 00 49 39 3F
6138- 27 24 24 34 00 24 24 24
6140- 15 56 64 0C 36 36 36 34
6148- 00 24 24 24 15 76 0E 76
6150- 24 24 24 26 00 20 24 64
6158- 2D 15 36 36 1E 3F 3D 00
6160- 24 24 24 2D AD 36 1E 3F
6168- 3F 00 20 24 64 2D 15 36
6170- 36 16 1C 1C 3E 3D 00 24
6178- 24 24 2D AD F6 3F 0E 0E
6180- 0E 0C 00 2D 2D 20 1C 3F
6188- 07 20 0C 2D 3D 00 09 24
6190- 24 E4 2B 2D 3D 00 20 24
6198- 24 4D 31 36 36 1E 3F 3D
61A0- 00 09 E4 1C 24 6C 09 36
61A8- F6 F4 00 24 24 24 4D 31
61B0- 36 36 3E E0 17 14 00 64
61B8- 04 E0 6C 09 F6 1E 0E 0E
61C0- 26 00 09 24 3C 1C 24 4D
61C8- 31 F6 F7 00 2D 2D DC 1B
61D0- 0C 0C 0C 0C 3C 3F 2F 00
61D8- 00
```

```
]LIST

10  REM  LOAD SHAPE TABLE
20 D$ =  CHR$ (4)
30  PRINT D$"BLOAD HTEXT"
40  POKE 232,0: POKE 233,96
50  REM  RESET VARIABLES AND CLEA
     R SCREEN
60  CLEAR : TEXT : HOME
70  DIM V(9)
80  PRINT : PRINT "LIST THE PERCE
     NTAGES "
90  FOR I = 1 TO 9: INPUT V(I): NEXT

95  REM  NO. OF POINTS ON X AXIS
100 LV = 100
105  REM  NO. OF INTERVALS ON X A
     XIS
110 IN = 21
120  REM  HIRES GRAPH
130  HGR2 : HCOLOR= 3
140  SCALE= 1: ROT= 0
150  GOTO 280
160  GOTO 330
170  REM  DRAW BORDERS
180  HPLOT 25,0 TO 25,151
181  HPLOT 25,151 TO 279,151
190  REM  START FROM
200 P = 150 * V(1) / LV
210  HPLOT  INT (279 / 9),(150 -
     P)
220  REM  PLOT GRAPH
230  FOR I = 1 TO 9
240 P = 150 * V(I)   LV
250  HPLOT  TO  INT (279 / 9 * I)
     ,(150 - P)
260  NEXT I
270  END
280  FOR L = 0 TO 159 STEP (159 /
     IN)
290  IF L =  > 151 THEN 310
300  HPLOT 25.L TO 30,L
310  NEXT L
320  GOTO 160
330  FOR X = 3 TO 279 STEP  INT (
     279 / 9)
340 S = S + 1
350  IF S = 1 THEN 400: REM  ERAS
     E 0
380  DRAW S AT (X - 2),160
390  HPLOT X,151 TO X,147
400  NEXT
410  HPLOT 279,151 TO 279,147
420  DRAW 10 AT 275,159
430  REM  DRAW VERTICAL NUMERALS
440  DRAW 1 AT 18,154
450  DRAW 6 AT 12,78
451  DRAW 1 AT 18,78
460  DRAW 1 AT 12,7
461  DRAW 1 AT 18,7
462  DRAW 2 AT 6,7
470  DRAW 6 AT 18,116
471  DRAW 3 AT 11,116
480  DRAW 8 AT 12,40
481  DRAW 6 AT 19,40
490  REM  DRAW 'PERCENTAGE AND SU
     BJECT'
500  DRAW 26 AT 0,35
501  DRAW 15 AT 0,45
502  DRAW 28 AT 0,55
503  DRAW 13 AT 0,65
504  DRAW 15 AT 0,75
505  DRAW 24 AT 0,85
506  DRAW 30 AT 0,95
507  DRAW 11 AT 0,105
508  DRAW 17 AT 0,115
509  DRAW 15 AT 0,125
510  DRAW 29 AT 130,178
511  DRAW 31 AT 140,178
512  DRAW 12 AT 150,178
513  DRAW 20 AT 160,177
514  DRAW 15 AT 170,178
515  DRAW 13 AT 180,178
516  DRAW 30 AT 190,178
520  REM  DRAW MIDLINE
530 A = 30
540  FOR I = 1 TO 61
541  HPLOT A,75 TO A,75
542 A = A + 4
543  NEXT I
550  GOTO 170
560  END
```

Listing 2 is a BASIC program to draw simple graphs on an x,y axis. I use it to draw a graph of my examination results in percentages.

From line 10 to 40 the program loads HTEXT and sets the pointers. In line 78 the DIM statement allows for 9 inputs. (This is not really necessary if fewer than 10 points are needed on the y axis of the graph.) Line 90 requests the 9 subject results to be entered. Line 180 draws the borders for the graph. Lines 200 to 210 plots the starting point. Lines 230 and 260 plots the rest of the graph. Lines 370 to 420 draws and positions the horizontal numbers.

From line 440 to 480 the vertical numbers are drawn. Line 500 writes the word "percentage" next to the left margin. Line 510 writes the word "subject" below the graph. From line 530 to 540 the midline of the graph is drawn.

It should be quite straightforward to change this graph plotter to suit individual tastes. □

MacPascal

BARRY KAULER CONTINUES HIS ASSESSMENT OF APPLE'S MACINTOSH......

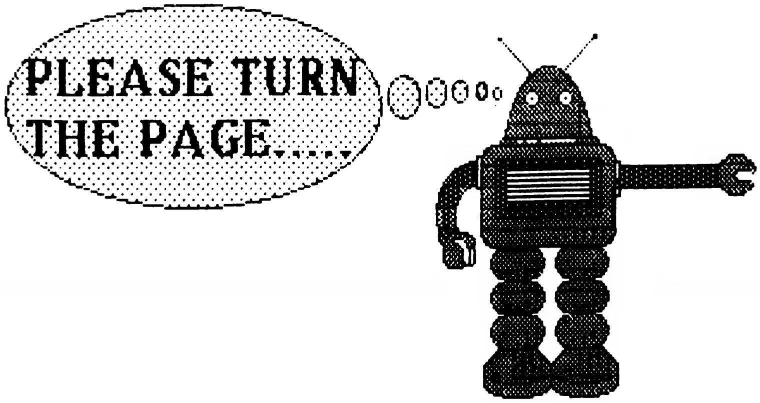
Macintosh seems to have given a new lease of life to jaded software writers, frustrated with conservative hardware standards that don't allow a full play of creativity. Mac's technical superiority over other mass-market microcomputers has provided an inspiration that is going to develop into a flood......

Are you a disbeliever? Can't you see why I'm so enthusiastic about Mac? Do you think that since this article is appearing in "Australian Apple Review" that it is obviously going to be biased in Apple's favour?

Well I would like to convince you otherwise..... actually I went through a process myself of being weaned off IBM-PC compatibles and onto Macintosh, and the rationale for my change of heart is the subject of an article published in issue 6 of this journal. So read that if you're interested....

Then I reviewed a very exciting graphics CAD software package called "MacDraw" in issue 7....

The possibilities with graphics on Mac are **fantastic** and some extremely interesting software is coming out, however software authors have also been inspired in other applications..... In this article I want to show how even an ordinary programing language has been transformed into something **new** and **EXCITING**...


PLEASE TURN THE PAGE.....

MacPascal is something new... sure it's ANSI-standard Pascal, but there's so much more to it than that. To fully understand the power of MacPascal one needs to have an understanding of the concepts employed in the Mac disk operating system. This is covered more thoroughly in other articles, so lengthy details won't be reproduced here. The operating procedure required for the Macintosh really needs to be demonstrated, and pages of explanation are not very satisfactory, however I will highlight some main points.

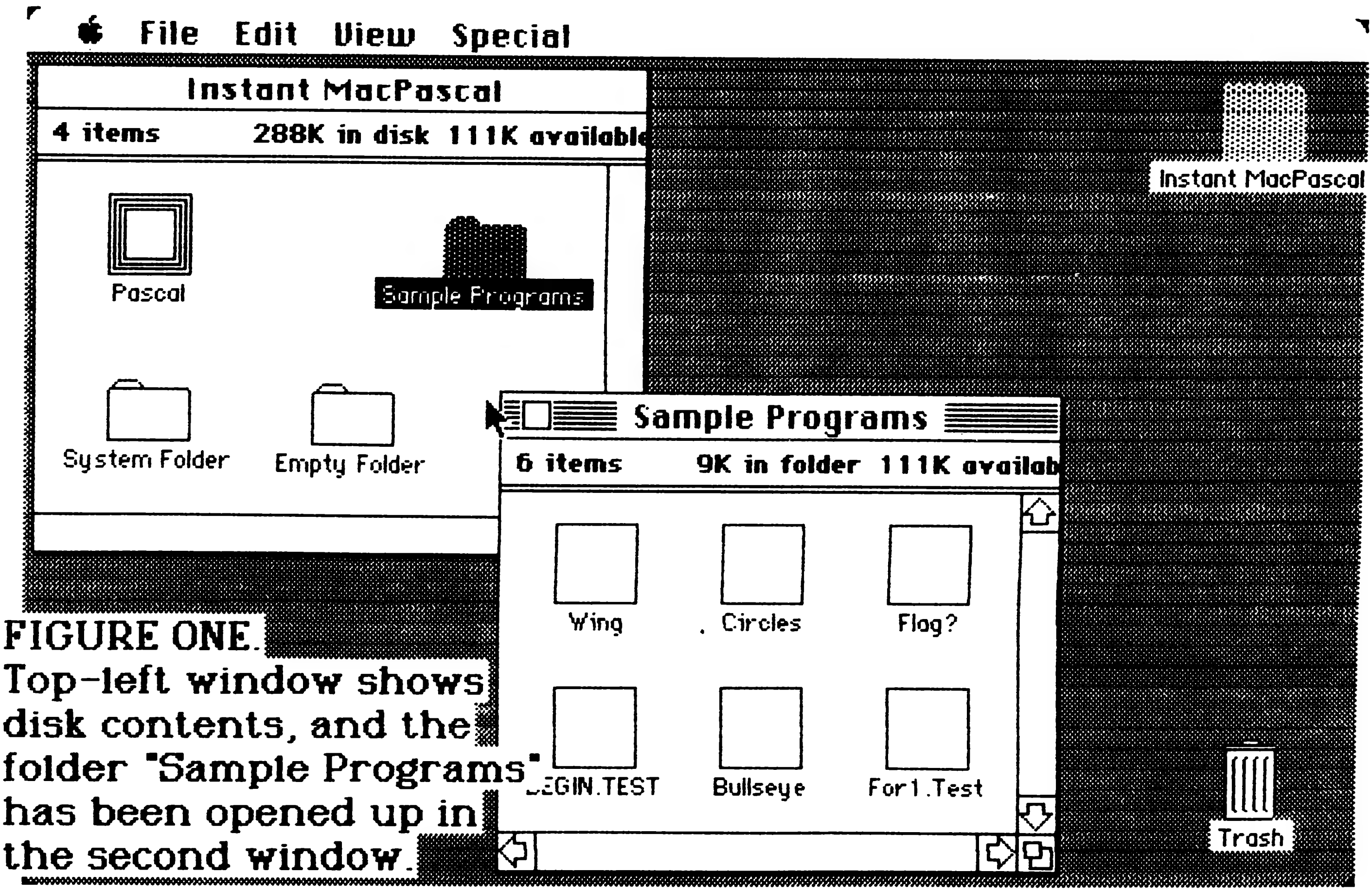


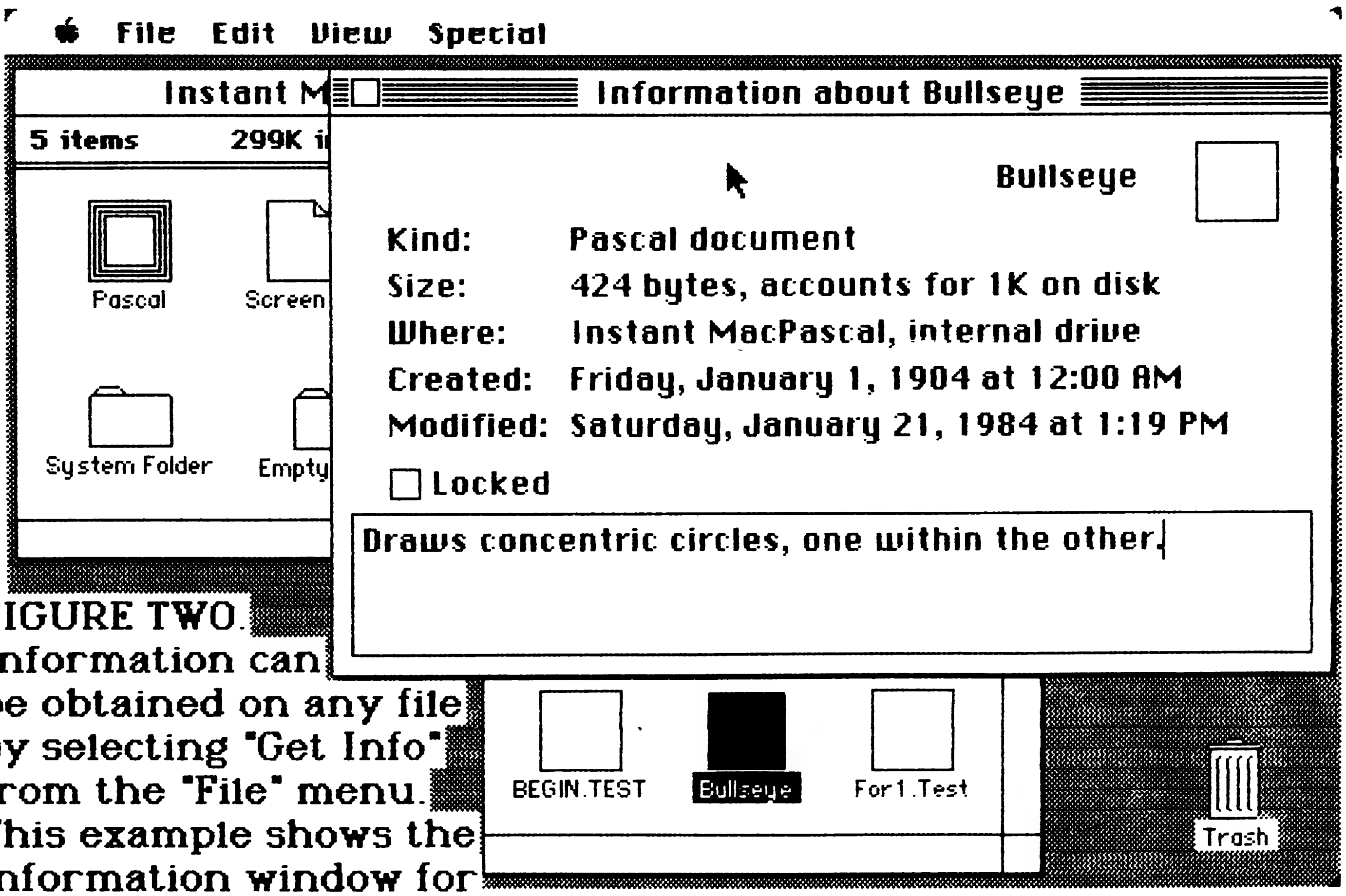
FIGURE ONE. Top-left window shows disk contents, and the folder "Sample Programs" has been opened up in the second window.

Once the Pascal disk is plugged into the drive, its icon appears in the top right corner and can be opened up by pointing at it and double-clicking the mouse button, which is the standard method for opening anything.

Upon opening, a window appears showing the contents of the disk, as shown in Figure One in the top left corner. These contents could be programs or data, or folders containing more files, hence the filing structure is hierarchical, which is a feature that you can very rapidly grow to love once you've used it. The folder named "Sample Programs" for example has been opened up on the screen, and the second window shows the programs within.

The usual range of filing operations are extremely easy to achieve: for example to erase a particular file, just point to it and drag it with the mouse button held down, to the trash can. The same dragging procedure is used for rearranging the files, such as moving a file from one folder to another folder or disk.

For any disk to be ejected, it cannot be simply pulled out of the drive: "Eject" must be selected from the "File" menu and after performing various checks ejection will then take place under program control..... the disk actually pops out of the drive.



Information about Bullseye

Bullseye

Kind: Pascal document
Size: 424 bytes, accounts for 1K on disk
Where: Instant MacPascal, internal drive
Created: Friday, January 1, 1904 at 12:00 AM
Modified: Saturday, January 21, 1984 at 1:19 PM

☐ Locked

Draws concentric circles, one within the other.

FIGURE TWO. Information can be obtained on any file by selecting "Get Info" from the "File" menu. This example shows the information window for the program named "Bullseye".

Information can be obtained on any file simply by selecting "Get Info" from the "File" menu, and Figure Two shows the information winbdow for the file named "Bullseye". Mac has an in-built battery operated clock so the time and date are available and file creation and modification dates and times are automatically recorded. Also a message area allows the user to type in a few lines about the program, which I found really handy.... I'm quite impressed with this "Get Info" feature.

Now should you be satisfied that "Bullseye" is the one you want to execute, all you need to do is follow the standard procedure for opening anything up: double-click on it, and since it was created by MacPascal, this will also be automatically loaded along with the program.... very neat. Another way of going about executing "Bullseye" is to first double-click on the "Pascal" icon, which will open up Pascal, ie will bring in the Pascal Interpreter (yes it's an interpreter!) and run it, then you're ready to start typing in a program. At this point in time, selecting "Open" from the "File" menu will bring up a window as shown in Figure Three, within which are listed all the Pascal programs on the disk. Selecting "Eject" allows another disk to be inserted and a program loaded from it. Clicking on "Bullseye" selects it, then clicking in the "Open" button loads it from disk, and it then appears on the screen as shown in Figure Four.

All of this file handling is highly standardized for all Macintosh applications programs and languages, and in fact I initially used MacPascal quite happily without having a manual to refer to.... which is really something. With all of the software I've got, I went through the manuals once, then that was the end of their usefulness, except for the very odd occassion. Think about that: it's quite significant.

Now that I've introduced file handling on Mac, with particular reference to MacPascal, I can go ahead and explain about the language itself... my goodness, Pascal on Mac sure is different from any Pascal I've encountered before!.....

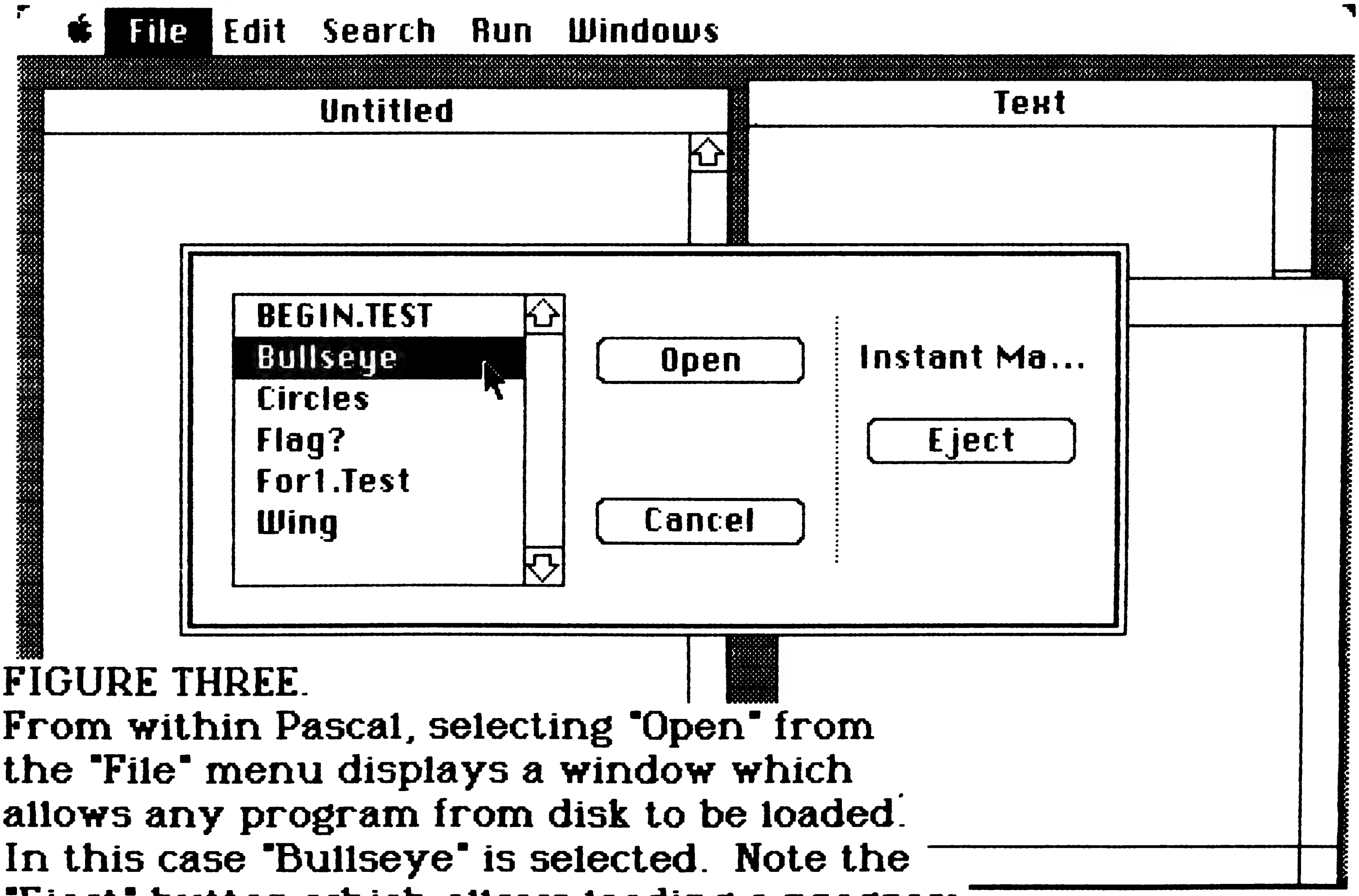
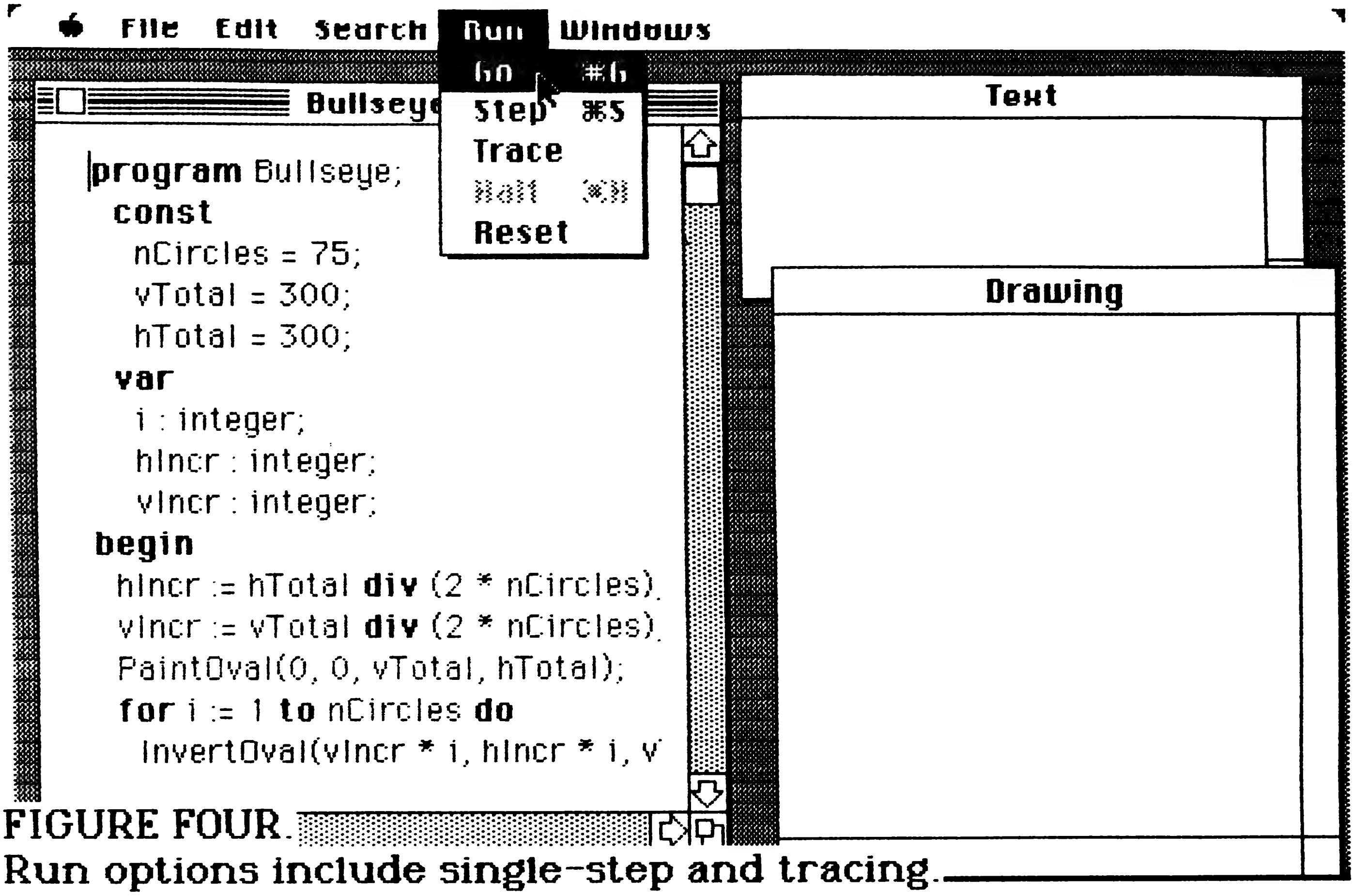
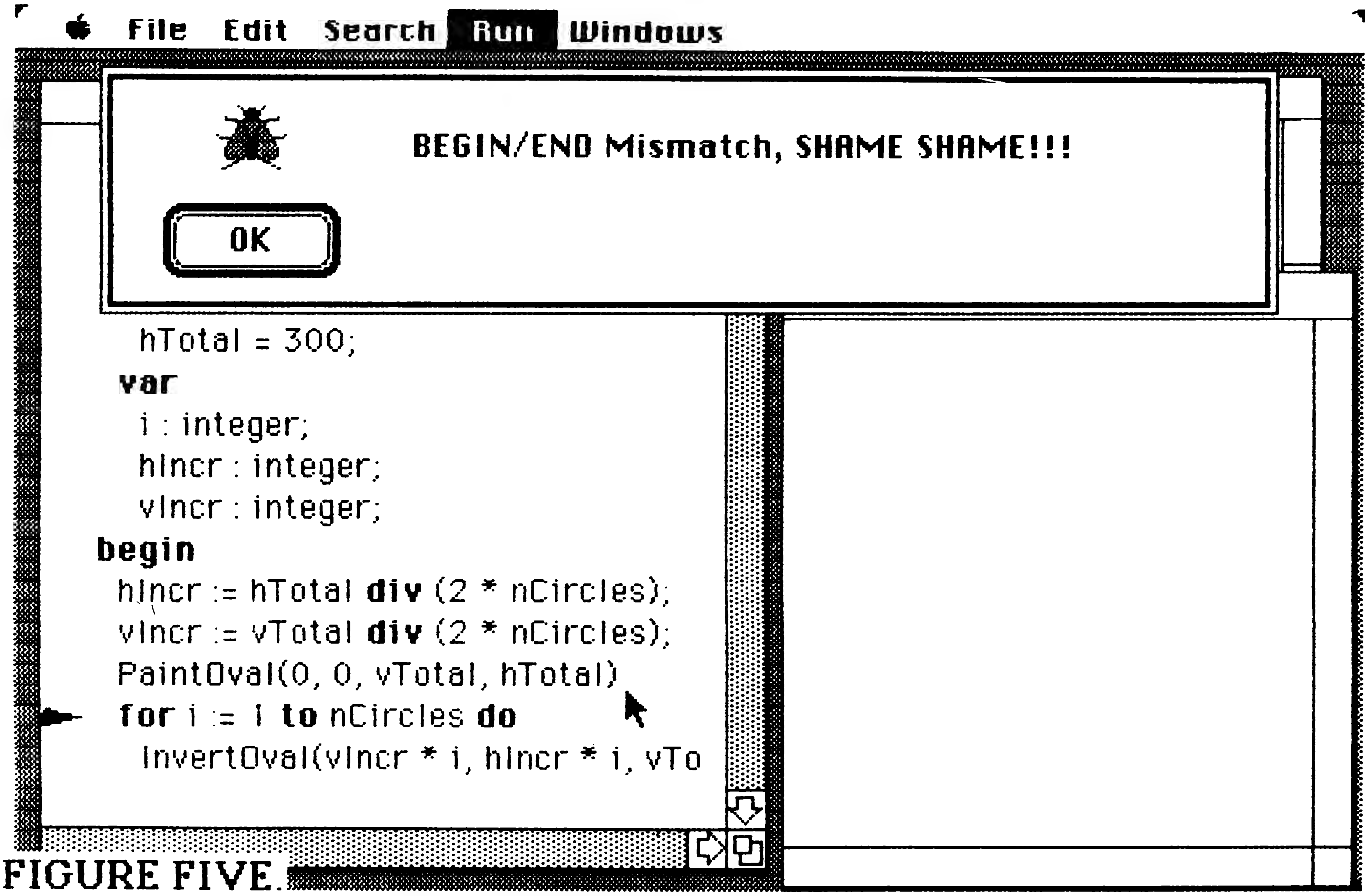


FIGURE THREE.
From within Pascal, selecting "Open" from the "File" menu displays a window which allows any program from disk to be loaded. In this case "Bullseye" is selected. Note the "Eject" button which allows loading a program from another disk.



```
program Bullseye;
  const
   nCircles = 75;
   vTotal = 300;
   hTotal = 300;
  var
   i : integer;
   hIncr : integer;
   vIncr : integer;
 begin
  hIncr := hTotal div (2 * nCircles);
  vIncr := vTotal div (2 * nCircles);
  PaintOval(0, 0, vTotal, hTotal);
  for i := 1 to nCircles do
   InvertOval(vIncr * i, hIncr * i, v
```

FIGURE FOUR.
Run options include single-step and tracing.



BEGIN/END Mismatch, SHAME SHAME!!!

```
    hTotal = 300;
   var
    i : integer;
    hIncr : integer;
    vIncr : integer;
  begin
   hIncr := hTotal div (2 * nCircles);
   vIncr := vTotal div (2 * nCircles);
   PaintOval(0, 0, vTotal, hTotal)
   for i := 1 to nCircles do
    InvertOval(vIncr * i, hIncr * i, vTo
```

FIGURE FIVE.
An arrow points to a line with syntax error.

One of the nice things about an Interpreter is the immediate interaction: you don't have to wait while a Compiler translates your entire program into machine language just because you changed one line of program. This immediate interaction also aids debugging. Let me whiz through some of the main features of this Pascal.....

Windows of course are all part of the Mac philosophy, and MacPascal is no exception. In fact MacPascal can display up to six windows: (1) displaying the program listing, (2) text program output, (3) graphics program output, (4) variables display, (5) instant execution and (6) Clipboard. Variables display and instant execution windows are part of the superb debugging facilities.

Anyway before we get that far, consider the program itself: to get it into the program listing window, it can be typed in or an old program loaded. Notice in Figure Four how easy the program is to read: this indentation and boldface lettering occurs automatically as the program is typed in. Text can be in one of three sizes: 9 point, 12 point, or 18 point, though of course the smaller size text will fit more easily into a smaller size window. The windows can be any size or location on the screen and any of them can be simultaneously viewed on the screen.

Let's now say that the program is in there, by one means or another, and selecting "Go" from the "Run" menu will start execution, as shown in Figure Four. But note some other options in that menu. "Step" will allow single-stepping through the program, while a hand points to the appropriate line in the program as you step through. Also you can put breakpoints anywhere in the program by putting stop-sign icons in the listing's left margin. The variables window allows simultaneous monitoring of variable values as you step through, and while the program is stopped you can type any Pascal Statement into the instant execution window for immediate execution.

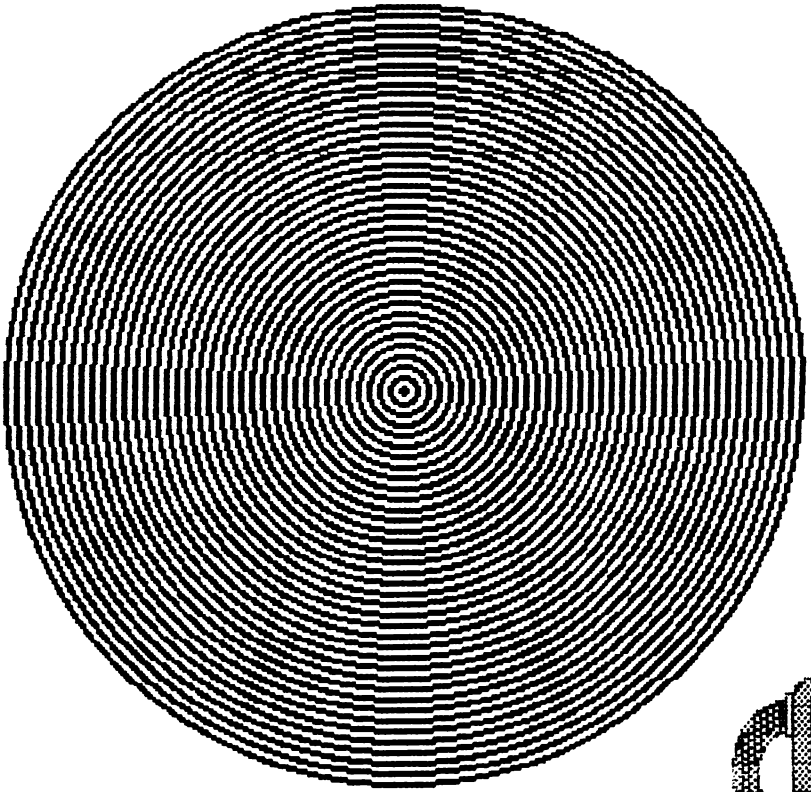
If you had selected "Go" from the "Run" menu, then off she will go, but should a syntax error exist then everything will stop, there'll be a beep from the loudspeaker, a window will appear telling you what's wrong and an arrow in the left margin will point at the offending line. Figure Five shows this. In that example a semicolon was left off.

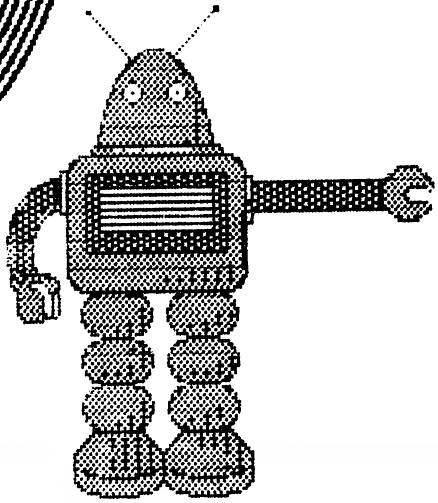
Standard Mac procedures for editing are used.... and boy it's so easy! Just move the pointer to the required insertion point, click the button, and type in or delete what you want. I've grown to consider the mouse much more convenient than cursor keys. Any section of the text can be changed, deleted or shifted with the greatest of ease. Notice in the menu bar something called "Search": this allows you to find and change any text string, either particular or all occurences of the string. Note that there's virtually nothing to learn to be able to use these editing features... I was in there editing and single-stepping, etc, before I even got my hands on the manual.

Of course although the Pascal is ANSI standard it does have extensions for graphics, etc. However program control of windows, menu's, icons, dialog boxes, etc, is limited, but Apple have indicated that in the not-to-distant future we'll be seeing a MacPascal with all of those extensions, which will be great for serious software development.

I think that's enough to give you the general idea... so I'll finish off this article. I'm wondering if MacPascal will help to sound the death-knell for Basic, now that the former is so interactive and easy for the beginner to use......

Anyway I've been using the program "Bullseye" for illustration purposes throughout this article, and now it is in there and debugged, so I had better run it. So, selecting "Go" from the "Run" menu:





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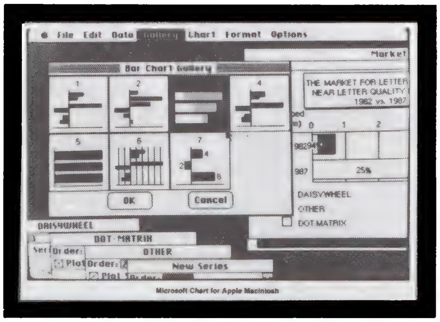

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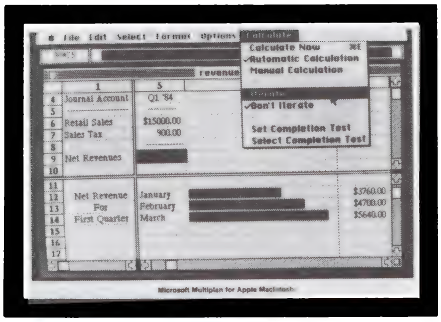
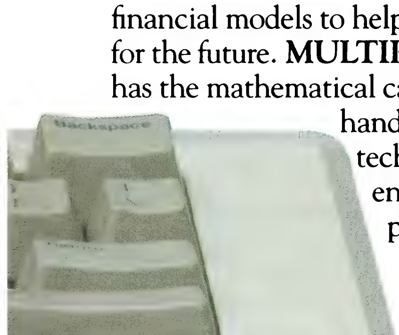


	1	5	
4	Journal Account	Q1 '84	
5			
6	Retail Sales	$15000.00	
7	Sales Tax	900.00	
8			
9	Net Revenues		
10			
11			
12	Net Revenue	January	$3760.00
13	For	February	$4700.00
14	First Quarter	March	$5640.00
15			
16			
17			

Microsoft Multiplan for Apple Macintosh



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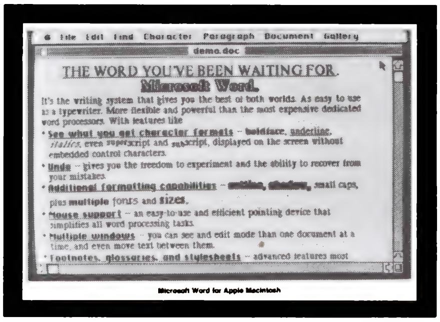

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Microsoft Word for Apple Macintosh

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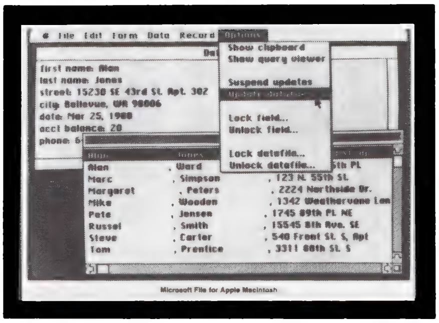

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street: 15230 SE 43rd St. Apt. 302
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acct balance: 20
phone: 6

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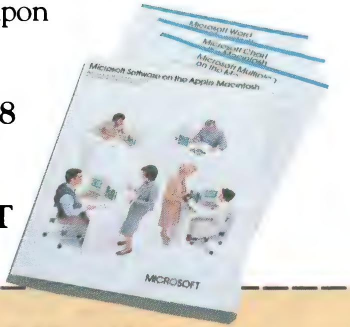
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Apple cursor editor

by W.D. Bartlett

This program is designed to give the user of an Apple II, //e or IIc a screen editing facility similar to that available on the BBC microcomputer.

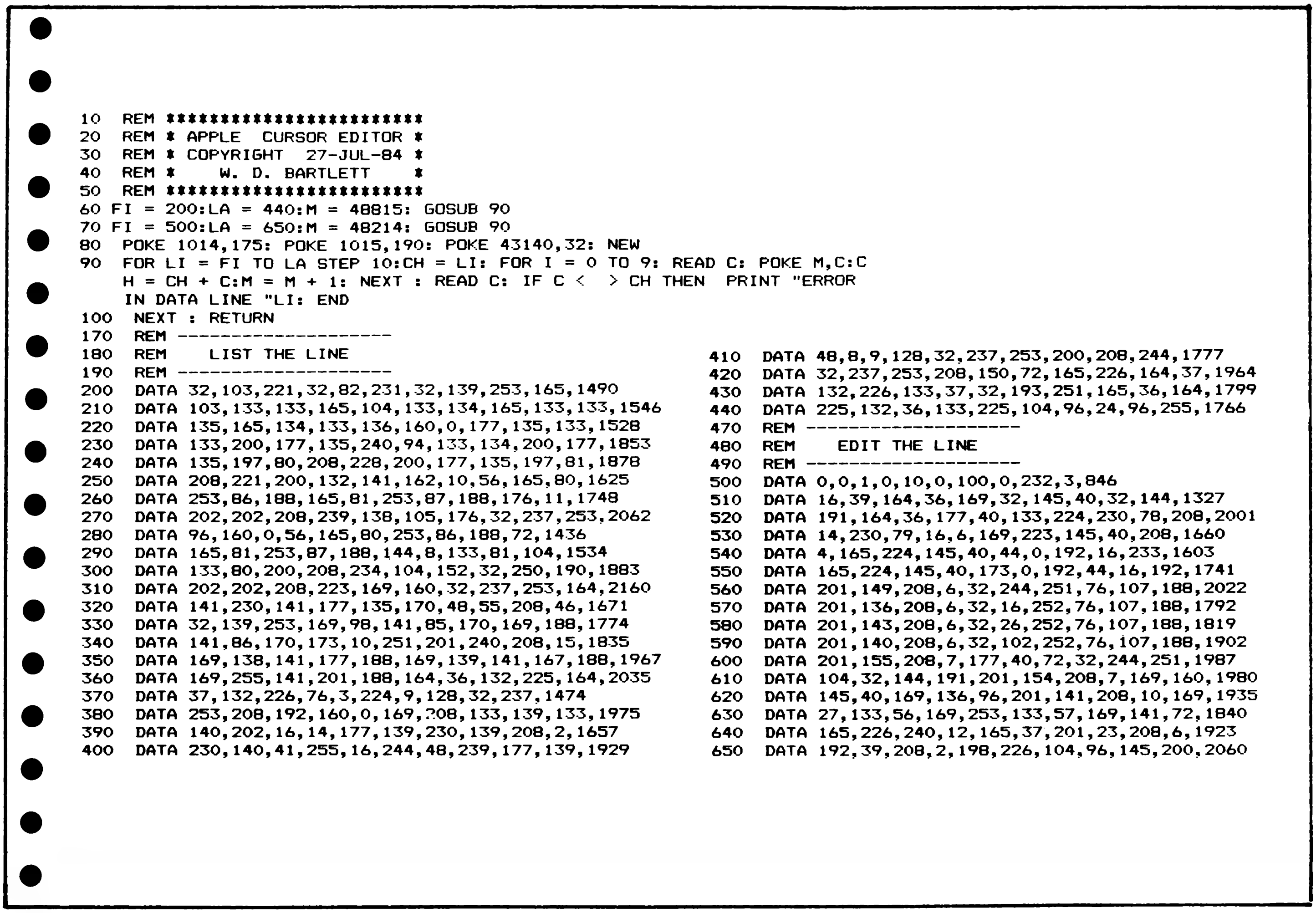
Features of LOAD EDIT

To avoid the problems usually associated with entry of machine code or long lines of DATA, this program uses a simple checksum after each line of 10 data values. When the loader encounters an incorrect value, the program reports the number of the offending line and stops so it may be corrected.

Using the Screen Editor

First start the computer with a standard DOS 3.3 disk. Then run LOAD EDIT. The screen editor is now ready for use. Apart from losing the ability to INIT new slave disks, the system will respond as before.

Suppose it is required to edit line 260. The user lists the line and activates the screen editing mode by typing '&260' and pressing (RETURN). The chosen line is then listed with no extra spaces and two cursors appear on the screen. The white square is called the WRITE CURSOR and it shows where anything entered will appear. The other, a flashing underline called the READ CURSOR, may be moved to any point on the screen by use of the arrow keys (the Apple II has no up down arrows – use (CTRL O) and (CTRL L) instead). When the read cursor is in position, the user may copy text from the location to the position of the write cursor by pressing the (ESC) key. New characters may be deleted by pressing the (DELETE) key (use (CTRL Z) on the Apple II). Finish the line by pressing (RETURN). The system now returns to normal mode. □



```
10  REM *************************
20  REM * APPLE  CURSOR EDITOR *
30  REM * COPYRIGHT  27-JUL-84 *
40  REM *    W. D. BARTLETT    *
50  REM *************************
60 FI = 200:LA = 440:M = 48815: GOSUB 90
70 FI = 500:LA = 650:M = 48214: GOSUB 90
80  POKE 1014,175: POKE 1015,190: POKE 43140,32: NEW
90  FOR LI = FI TO LA STEP 10:CH = LI: FOR I = 0 TO 9: READ C: POKE M,C:C
    H = CH + C:M = M + 1: NEXT : READ C: IF C <  > CH THEN  PRINT "ERROR
    IN DATA LINE "LI: END
100  NEXT : RETURN
170  REM --------------------
180  REM    LIST THE LINE
190  REM --------------------
200  DATA 32,103,221,32,82,231,32,139,253,165,1490
210  DATA 103,133,133,165,104,133,134,165,133,133,1546
220  DATA 135,165,134,133,136,160,0,177,135,133,1528
230  DATA 133,200,177,135,240,94,133,134,200,177,1853
240  DATA 135,197,80,208,228,200,177,135,197,81,1878
250  DATA 208,221,200,132,141,162,10,56,165,80,1625
260  DATA 253,86,188,165,81,253,87,188,176,11,1748
270  DATA 202,202,208,239,138,105,176,32,237,253,2062
280  DATA 96,160,0,56,165,80,253,86,188,72,1436
290  DATA 165,81,253,87,188,144,8,133,81,104,1534
300  DATA 133,80,200,208,234,104,152,32,250,190,1883
310  DATA 202,202,208,223,169,160,32,237,253,164,2160
320  DATA 141,230,141,177,135,170,48,55,208,46,1671
330  DATA 32,139,253,169,98,141,85,170,169,188,1774
340  DATA 141,86,170,173,10,251,201,240,208,15,1835
350  DATA 169,138,141,177,188,169,139,141,167,188,1967
360  DATA 169,255,141,201,188,164,36,132,225,164,2035
370  DATA 37,132,226,76,3,224,9,128,32,237,1474
380  DATA 253,208,192,160,0,169,208,133,139,133,1975
390  DATA 140,202,16,14,177,139,230,139,208,2,1657
400  DATA 230,140,41,255,16,244,48,239,177,139,1929
410  DATA 48,8,9,128,32,237,253,200,208,244,1777
420  DATA 32,237,253,208,150,72,165,226,164,37,1964
430  DATA 132,226,133,37,32,193,251,165,36,164,1799
440  DATA 225,132,36,133,225,104,96,24,96,255,1766
470  REM --------------------
480  REM    EDIT THE LINE
490  REM --------------------
500  DATA 0,0,1,0,10,0,100,0,232,3,846
510  DATA 16,39,164,36,169,32,145,40,32,144,1327
520  DATA 191,164,36,177,40,133,224,230,78,208,2001
530  DATA 14,230,79,16,6,169,223,145,40,208,1660
540  DATA 4,165,224,145,40,44,0,192,16,233,1603
550  DATA 165,224,145,40,173,0,192,44,16,192,1741
560  DATA 201,149,208,6,32,244,251,76,107,188,2022
570  DATA 201,136,208,6,32,16,252,76,107,188,1792
580  DATA 201,143,208,6,32,26,252,76,107,188,1819
590  DATA 201,140,208,6,32,102,252,76,107,188,1902
600  DATA 201,155,208,7,177,40,72,32,244,251,1987
610  DATA 104,32,144,191,201,154,208,7,169,160,1980
620  DATA 145,40,169,136,96,201,141,208,10,169,1935
630  DATA 27,133,56,169,253,133,57,169,141,72,1840
640  DATA 165,226,240,12,165,37,201,23,208,6,1923
650  DATA 192,39,208,2,198,226,104,96,145,200,2060
```

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AR1084

Off we go into the sky blue yonder

Microsoft's Flight Simulator

The new programs that allow personal computers to act as flight simulators are now becoming a feature of executive offices. It is, the argument goes, perfectly okay to be seen working with a flight simulator on the office Apple during your lunch hour, whereas it would not be quite the article to be seen playing "Lode Runner", or PacMan".

To use a genuine flight simulator at a major airport is a quite awe-inspiring experience. The flight simulators that Qantas have for their 747s provide such unbelievable realism that when a pilot has gone through a series of emergencies on them, he comes come away covered in sweat and mentally exhausted. Which is why Qantas have such a good safety record.

These flight simulators are so real that they can easily create a suspension of disbelief.

After taxiing and taking off the pilot believes that he is flying a machine – because all his senses tell him so. And it is at that moment that the instructor switches off two of the engines and lets the pilot cope as best he can with an extreme and immediate emergency.

Obviously this sort of realism cannot be brought to the personal computer screen. A good flight simulator costs several million dollars.

But as each new flight simulation program is published the improvements are such that there is no doubt that a pilot with a Private Pilot's Licence can keep skills honed by regular use of the computer.

Amazing program

From MicroSoft – that truly amazing company – comes their latest version of a flight simulator. It is a fast-moving and realistic program that allows you to consider all the variables and make the fast decisions that a pilot is sometimes forced to make.

It is an old saying that flying can be described as "hours of boredom interspersed by moments of sheer panic".

What the Microsoft flight simulator allows you to do is have those moments of panic in the safety of your own home.

We're not so sure about the hours of boredom. Flying any plane is an exhilarating experience that requires a great deal of concentration because of the immense amount of information coming in various forms to let you know where the aircraft is and what it is doing.

The Microsoft Flight Simulator manages to present at the same time a relatively complete set of instruments and the view from the cockpit window.

The top half of the screen is effectively the view you would see through the windshield of a plane.

High resolution

This high resolution view is upgraded about three times a second and the result is an uncanny level of realism, especially in colour. Resolution is excellent and objects on the ground are discernible as what they are rather than just a hazy intersection of lines.

The lower half of the screen contains the instrument cluster. On it you have the standard air speed indicator, an artificial horizon, altimeter, turn co-ordinator, heading indicator and rate of climb indicator – instruments which are to be found in almost every basic aircraft. As well as these you'll find a Omni-Bearing Indicator with a glide slope which helps you when you're making landings in instrument conditions, a clock, magnetic compass and various monitor lights.

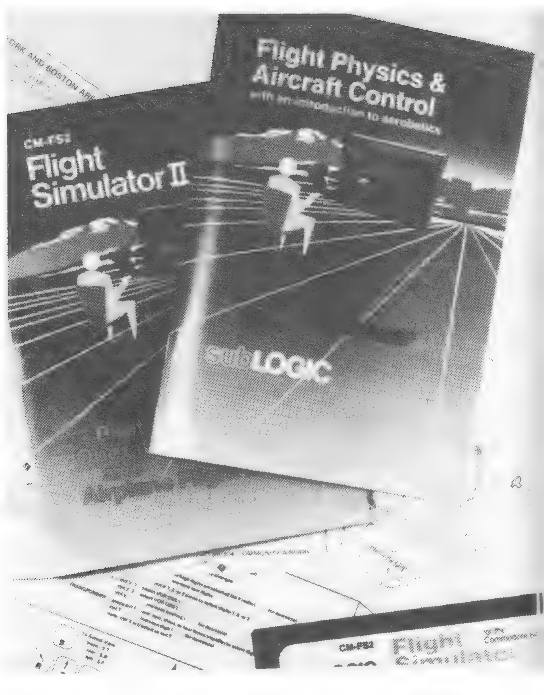
There's also a full set of instruments to tell you what the engine is doing, including a rev counter, oil temperature and pressure gauges and dual fuel gauges for left and right tanks.

On this plane you've got a single Nav/Com (navigation/communication) radio and a radar transponder that sends a coded signal every time a pulse from tracking radar hits the aeroplane.

Expensive aircraft

This is an extremely well-outfitted plane indeed and would cost you fairly serious money if you were to try and buy one to go real flying. About the only desirable instruments that are missing are an automatic direction finder and an optional second Nav/Com radio.

The Microsoft Flight Simulator is the brainchild of Bruce Artwick of Sublogic Corporation, who must be



congratulated on producing an absolutely phenomenal piece of programming.

He has chosen to simulate the Cessna 182, a single engine aircraft widely used in private flying. This aircraft has enough power and controls so that a novice pilot can easily get himself into trouble and therefore it is not normally used for student flying.

Experienced pilots tell us that the only difference between the program and the real plane is that the program seems to be able to climb a bit faster than the Cessna 182. Another difference is the simulator has a retractable landing gear whereas the Cessna 182 has fixed landing gear. It just adds slightly to the complications of flying this plane.

At the moment there is no yoke, throttle, trim leader or rudder pedals available on the Apple. However I am willing to bet very good money indeed that these will be available in the near future and that they will plug in through a special board to add realism to what is already an immensely realistic program.

The one control that the Microsoft Air Simulator has, that no aeroplane has, is a button called "P".

With this you can pause while you work out what the hell's going on and why the plane is plummetting earthwords. Would that all aircraft had the same facility. It would prevent a large number of accidents.

The Microsoft Flight Simulator has an editor which lets you set up almost an infinite variety of flight conditions and you can set it up to fly you from one geographic point to another.

There are ten pre-set flight levels included on the disk, ranging from easy flights to advanced instrument conditions and bad weather.

There is also a mode called British Ace where you can pretend that you are in a World War One plane fighting against Germans.

Magnificent colour

It is difficult to get across how magnificently-programmed this flight simulator is.

It is much more than a game. It is in fact a very powerful learning tool for anybody who is going for their private pilot's licence.

If you've got an Apple at the office and you would like to use it to play games but feel that this may not quite fit your image, buy a flight simulator program. Then you can pretend you're Biggles during your lunch break, and if anybody asks, you can just say that you're trying to improve your flying technique. And you will be telling the truth.

NOTE: Flight Simulator works well on the IBM PC, but it is important to note that you must have the colour graphics card if you need a colour display. And with this program a colour display is almost essential. Note also that it works in full colour only with a composite colour monitor. □

Line Editor

by Bevan Ting

Here is a little program that most of you might find interesting. It is a line editor. If you have been using Program Line Editor, you will find this program similar. But this routine is intended for use with your home-made database program or whatever you can think of. For example, you could adapt this routine into your mailing-list program and make life earier when you have to change the records.

The commands are:

CTRL-D to delete a character at cursor position.

CTRL-Q to enter line up to cursor and exit editor.

CTRL-C cancels line and exit editor. (same as CTRL-X)

RETURN enters entire line regardless of cursor position and exit editor.

CTRL-R to re-edit the original line.

-, – moves cursor backwards and forwards, respectively.

Typing any other character would cause that character to be inserted into the line at cursor position.

The variable "A$" contains the line to be edited, "N$" contains the final output. "N$" should be null ("") upon calling this routine.

This routine can be used on either 40 or 80 column screens. As far as speed is concerned, it is as fast as Neil Konzen's Program Line Editor. (Fewer features of course, but powerful enough to suit most people's needs.)

```
200 HOME
201 A$ = “THIS IS A TEST, THE CAT SAT ON THE MAT”:N$ = “”:TM$ = A$
202 VTAB 4: PRINT A$: VTAB 4
203 GET C$
204 IF C$ = CHR$ (13) THEN N$ = N$ + A$: GOTO 217
205 IF C$ = CHR$ (8) THEN 213
206 IF C$ = CHR$ (21) THEN 215
207 IF C$ = CHR$ (17) THEN 217
208 IF C$ = CHR$ (18) THEN PRINT : GOTO 200
209 IF C$ = CHR$ (3) THEN PRINT “@”:N$ = TM$: GOTO 217
210 IF C$ = CHR$ (4) THEN CV = PEEK (37): CH = PEEK (36):A$ = MID$ (A$,2): PRINT A$“”;: VTAB CV + 1: POKE 36,CH: GOTO 203
211 N$ = N$ + C$
212 PRINT C$;:CV = PEEK (37): CH = PEEK (36): PRINT A$;: VTAB CV + 1: POKE 36, CH: GOTO 203
213 IF N$ = “” THEN 203
214 A$ = RIGHT$ (N$,1) + A$:N$ = MID$ (N$,1,LEN(N$)-1): PRINT C$;: GOTO 203
215 PRINT LEFT$ (A$,1);:N$ = N$ + LEFT$ (A$,1):A$ = MID$ (A$,2): GOTO 203
217 PRINT : VTAB 12: PRINT N$: END
```

□

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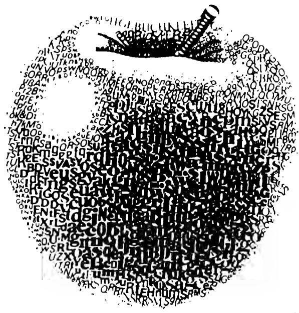

An advertisement this size in the DEALER DIRECTORY costs only $45 per issue.

Many of our readers ring us up to find out where they can buy Apple software and hardware.

Let them know where you are and what you have to offer. ☐

Worm in the Apple

We are certainly not going to mention the embarrassing series of letters sent to dealers regarding the availability of the Apple IIe. We worms can respect confidences.

Nor would wild horses drag from us the name of the senior Apple executive who knew not the difference between a bit and a byte. Which of us is perfect?

But we might ask a few curious questions about some other happenings which strike us as rather strange.

Take the case of the IIc.

A wonderful machine, we all agree. Announced as soon to be available with a pop-up Liquid Crystal Density screen of such clarity that it would make the angels (if not Seiko) weep with envy.

We know the screen exists. We've seen photographs. And it is well known that photographs do not lie.

And we know, because we saw it in the press releases, that it was due in the shops last month. Yet there is still no sight of this wondrous screen. All we know is that we can expect it Real Soon Now.

Which probably means sometime next year.

Do Apple announce these wondrous add-ons merely to tantalise us?

Is there a built in streak of corporate sadism?

Or is it that there are more technical problems involved in making this screen work properly than anyone envisaged?

If Sir Clive Sinclair (mortals call him Uncle Clive, worms call him Sir) can make such an unbelievable cock-up in the Old Dart of launching the Sinclair QL, then surely Apple can be excused its few foibles.

Surely.

No new IIc software?

This worm has been deluged with a plethora (a word meaning, according to my dictionary, "a bloody excess") of programs for the Macintosh, all of which are extremely exciting and mean beyond doubt the machine is going to be the massive success that Apple always said it would be.

True, sales were not quite up to targeted expectations in its first year in the United States, but with all the jolly new software available, they have started to boom again.

If so much software is available for the Macintosh, what then of the IIc? That lovely portable machine designed by the German Frogs? (The last statement may seem a contradiction in terms but there is a curious wormish logic to it.)

We know the IIc has a new microprocessor with CMOS technology called, with an imagination and poetry that rivals Andrew Marvell at his most lyrical, the 65C02.

And we worms know there are extra instructions built into this microprocessor which allow it to be more flexible in the way in which it handles programs.

Yet have we seen any programs written especially for the IIc? No. Not one.

Not a sausage.

The publisher of this magazine, who was all set to re-equip his revered IIe with the new 65C02, is now reconsidering the situation and waiting to see when and if and how the new software will be available. He was ever the canny man with the dollar.

He once told me he employed a worm to write this column because he knew there was no worms' trade union.

When he went to purchase the new 65C02 he found there are three different manufacturers and only one of them produces a 65C02 microprocessor which works totally satisfactorily in an Apple.

I note that the Sydney Apple Users' Club was offering these microprocessors at discount prices some months ago. They were, so they said, made according to military specifications. What that means I know not. Probably if they don't work someone gets shot.

But were these 65C02s from the right manufacturer?

Would they work properly in an Apple?

Surely they couldn't have got it wrong?

Surely the Apple User's Club(a stalwart, upright, forthright, downright collection of honest burghers) couldn't make a mistake like that. Surely not.

Apple crystal

The following is a strange but true story which shows how perseverance wins the day.

A cousin of mine has a fake Apple (Shame! Horror!) and when taken with the cooling amber fluid he changed around a few boards and blew the crystal.

Shaken and sobered, he fronted at his friendly fake Apple fixer (FFAF for short) who explained that the real Apple crystal ("rock" appears to be the "in" term) works at 14.250 Megahertz. And that Apple, in order to confound naughty FFAFs, kept them locked away, making them impossible to obtain on the open market.

All that was available was a crystal that worked at 14.318 Megahertz, which meant the colour display would go up the stuff as timing in this area is all-critical.

My cousin worm asked plaintively whether there was in the wide world of worms which I know so well someone who could get a real crystal for him.

Although I normally work as a mild

mannered reporter on "The Daily Apple", show me a telephone box and I can really get things moving.

So I telephoned Confucius worm in Singapore and asked him to put the hard word on the Apple factory there for one of these desirable crystals.

Failing that could he please find the name of the supplier?

I received a telephone call the next day from Confucius Worm, who told me, in his inscrutable Oriental way, that Apple Singapore got their crystals from a company in Singapore sited in an industrial estate called Jurong Park.

Confucius Worm had crawled over there and had asked in impeccable Chinese whether they could spare one invaluable crystal for unworthy self which could be despatched to Australia.

He was slightly amused when the reply came back that, of course, he could buy one, but why didn't he apply to head office in Melbourne, Australia.

I found this story so difficult to accept that I got my Melbourne cousin, known in the family for complex reasons as Mr Personality, to check up on this strange story.

And it is true. Every word of it.

No one at Apple Australia in that stately pleasure dome in Ryde seems to know one word of this, but all Apple IIe crystals come from a Melbourne company called Hi Q or some such title.

'Tis a mad world, my masters.

My cousin with the fake Apple now has the correct crystal and his machine will, we trust, work happily ever after because his FFAF has found a source of genuine crystals.

And Apple Australia can now go around big-noting that their machines do, indeed, have local content. And it took a worm to find that out for them.

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Microfloppies

The best writer on computers I have ever read is Jerry Purnelle, who is not a worm, and writes for "Byte" as well as penning some quite excruciatingly bad science fiction novels.

The next best writer on computers is Erik Sandberg-Diment, also not a worm, whose column appears in the "New York Times" and sundry other papers including the "Sydney Morning Herald" every week.

Mr Sandberg-Diment has raised a problem which has been referred to by the publishing company of this august journal many a time and oft. And that is the shortness of life expectancy of the new microfloppies compared with the standard disks.

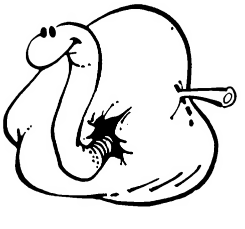
He has information which suggests the expected life cycle is less than half. My guess, for what a worm's guess is worth, is that it is less than a third.

So before everyone joins in this mad lemming rush to the new microfloppies which fit a in a shirt pocket (worms don't have shirts, leave alone shirt pockets, so we keep ours in a case) let us all ask ourselves whether the size and elegance of the new disks merely disguises the fact that they have a built-in death rate which must, eventually, destroy a lot of valuable data.

This worm has a spy in Hewlett Packard who tells me that they quite categorically warn against the over-use of micro disks and have a warning light that comes on after a given time.

Perhaps such a warning light should be switched on for the computer fraternity at large before we all get lumbered with drives which are destined eventually to self destruct.

Or am I being unusually alarmist? ☐



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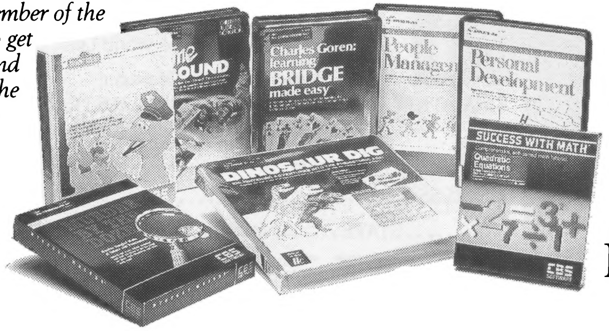

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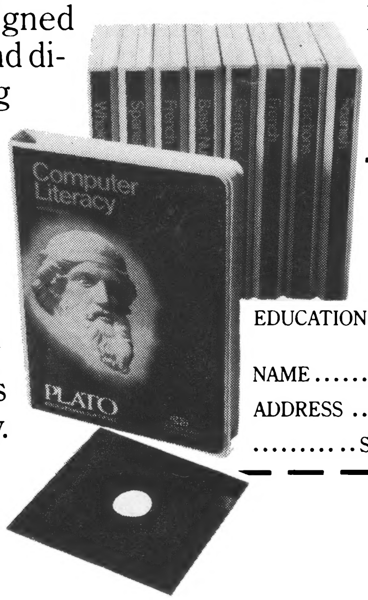

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